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ABSTRACT

The author states his views on career education, gives a detailed definition of the career development concept, and offers various materials that may be of value to educators in understanding and translating this process into practical school applications. He further discusses the behavioral objectives needed to implement a career development program as a vehicle to teach certain subjects. The final portion considers all the elements needed for possible program organization. Two thirds of the document consists of 14 appendixes of materials relating to career education programs including: a teacher inservice program of vocational exploration (12 pages), a survey of employer attitudes toward work-oriented students in entry level jobs (17 pages), a community resource utilization program (18 pages), an environmental careers program (10 pages), a proposal for elementary integrated industrial arts (12 pages), and material about career related mathematics, geometry and communications programs (40 pages). (BP)

ED 099530

CAREER DEVELOPMENT CONCEPT

AN UNDERSTANDING, PLAN, AND WORK PACKET
FOR EDUCATORS K - 12

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CE002611

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PHILOSOPHY OF EDUCATION

It is the fundamental belief of the faculty of Independent School District 281 that education in a democratic society should provide an environment in the public schools which will enable the pupils to acquire information, skills, and knowledge; worthy ideals and attitudes; and appreciations and understandings conducive to successful and fruitful living in a changing world. Inherent in this concept of education is the provision for self-realization according to individual needs, interests, and abilities.

The school as an institution of our social order is organized to promote and perpetuate the fundamental aims, purposes, principles, and objectives of our democratic society. It is the function of the public school in a democratic society to take the children of all the people at the level at which they are and develop their abilities to the greatest extent through all school activities.

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FOREWORD

Those of you that have heard me speak of career development certainly understand two things: (1) I believe it holds the most viable approach to attacking the current crisis of relevance in our schools and,(2) I feel strongly that it is every teacher's responsibility to relate their subject to life and the real world each of their students must face eventually. It is not correct to say that careers involve "all" of life after school but it is fair to say that it occupies the greatest share and its relation to identity, leisure, satisfactions, etc., cannot be calculated. It is important to all of us and thereby offers a non-discriminating vehicle for education. "Career Development is the ongoing process of integration of self and society through work lasting one's entire life."

It seems to me that there are four logical phases in implementing a career development program into an educational complex such as a high school or an elementary school:

1. In phase one the need must be made clear to the professional educators. The method here involves a speech and discussion of problems in education. Career development is defined and referred to as a viable alternative but not explained in depth. The objective of phase one should be to get the educator to comment to himself and/or his friends "We really have problems in education; perhaps we should explore this career development angle."

2. Phase two involves an explanation of career development in some detail. This is done by a presentation and distribution of materials that will aid the teacher in understanding and implementing the concept.

3. Phase three and four are interchangeable due to circumstances. Phase three involves units with common interest (such as the discipline of English, social studies or math)gathering in a small group not to exceed ten. This task group discusses ways to develop, implement, and utilize career development materials in their area. It is, after all, their expert area competence that will provide the best ideas for transfer and the most realistic curriculum changes.

4. Phase four deals with "process." It is recommended that all parts of this educational complex (pod involving elementary, junior high, and senior high, individual school or school system) gather in small groups of mixed responsibility to discuss a program. This "process" element is vital as career development is, by definition, alive and changing and directly related to the individual. It has human concerns and it depends on all things human as well as the changing society. For these reasons a plan or program or series of events must be decided upon with all factions and elements having inputs. People support what they help create. In this instance it is the program that holds together what all the individual units are doing and gives it definition under one title: Career Development Program.

The following materials will be divided according to these four phases.

Cliff E. Helling

PHASE I

THE PROBLEM

PHASE I

AN INTRODUCTION -- AFFAIRS OF THE HEAD, HEART, AND HANDS

The schools at this time concern themselves with affairs of the head (cognitive) to create and support the cult of "more education equals a better person." The reasons for this are evident in the make-up of teachers. They are products of a typical middle class society that has enabled them to achieve whatever success and status they enjoy through education, with emphasis on the cognitive domains. In their love for students, they use an inappropriate delivery system for their content, one based on their own one route to success: college. We have not considered the whole child -- he has a heart and hands, yet the alternatives he has been exposed to through various content areas primarily emphasize the head.

It is the writer's firmest conviction that the individual human person is the most important element in the educational system. He should be able to have exposure and experience in affairs of the head (cognitive), the heart (affective), and the hands (psychomotor) in relation to the content teachers present if he is to become who he really is. As teachers are culture-bound, so are the students, for the cycle reinforces itself. If a student is going to be allowed to become who he can be, he must be allowed to balance his needs against feedback arranged for by teachers in the three areas listed above.

As long as teachers continue the cycle of judging students on the narrow band of academic capacities (head), the students will continue to use these judgments to generalize about themselves. We discriminate against these students by not allowing equal weight in the curriculum to the heart's and hands' involvements. Our curriculum discriminates against the 80 percent that never will have college degrees (because of its academic emphasis) but also presupposes that the 20 percent who do profit (because of academic ability) should go on with emphasis on the cognitive domain. This means that since our schools do not allow for psychomotor and affective domains to the extent they do cognitive, we discriminate against those 20 percent as well. In effect we are programing for failure.

Career education concept can help to equalize this process, for its basis for being is relating content of school to real situations and real people in the real world of work. This use of reality forces a balance of all three factors above.

As a factor of the involvement of career information and the subject content, the student will learn through career education activities that it is not always a pretty world. This is the fairest (although unpleasant) way to base curriculum in our schools. If reality is to be changed for the better, it must first be recognized and dealt with by the whole child through school activities.

If there can be a model strong enough to equalize the emphasis of all factors on self-development (career development process), we have the opportunity to affect our economy as people become who they decide they must. We may then be able to rearrange the status structure that now exists in our country, for if teachers can rise above who they are (products of a system that rewarded the head) and fairly allow heart and hands to be equal determinants in decision-making in self development, we could not only say, but mean, "all work has dignity."

Once we realize work (broad career) includes what we are paid for plus the psychologically rewarding endeavor that together tell society who we are, we can worry less about "working to his capacity" in terms of academic endeavor and allow students to develop in balancing the affairs of the head, heart, and hands. It is the teacher's job to arrange for this to happen in relation to his or her content area.

The middle class value system that dictates that the harder you work, the better person you are, has driven us to "mine" the human resource of our country through our schools where cognitive concerns are emphasized. If the writer knew one certain person could discover the cure for cancer, the position would remain the same: he should be aware of his cognitive ability but also his affective and psychomotor capacities must be allowed for, and if he has had an opportunity to analyze and explore himself and the various subject contents through school in this relationship, it would be his choice. If he chose farming or truckdriving, he must be allowed to do this for he is the person living his life and the writer cannot play God and state as an absolute that cancer should be cured. The writer can absolutely state that the humanistic attitude of all cognitive, affective, and psychomotor alternatives should be explored and the freedom to choose from a cluster of related activities is the right of each person. We must strive to make it as culture-free as possible, for that very fact may be a self-fulfilling prophesy, and society may evolve to allowing people to become who they most want, should, can, and will become.

Career education offers important concepts to further the non-discriminating process in our schools just mentioned. It serves as a humanizing vehicle to help content make the jump to the real world (only humans have careers) to give it a frame of reference students can better project into and therefore understand. It offers a clustering idea where careers (also people, things, and ideas, as this concept is an effective teaching tool geared to allowance of non-discriminating exploration of content by students) are represented around some component so a student may explore and relate to them with his heart and his hands and (but not only) his head.

Implications in career education allow for no more failure in our schools. With the range and inter-relationship of the three factors above offered in fair context, the alternatives for success are increased infinitely. All students may prepare for a future that considers the relative weight of each in his particular situation. It is the educator's job to present content in honest relationship to affairs of the head, heart, and hands and allow students to explore career opportunities in clusters (so alternatives are available allowing for economic and personal situations) that will insure success as productive humans in an increasingly accepting society of people who base goodness on self-fulfillment as the ultimate goal of humanity.

As was well stated in a recent film viewed by the writer: "If man does not achieve and serve, he is nothing. We have educated many but prepared few."

LOSERS ARE ESSENTIAL TO SUCCESS OF WINNERS

Most educators will acknowledge that grading is an unpleasant experience for the majority of their students; since many will do poorer than expected, we build in failure as a necessary opposite of success. The normal curve still forms the basis for grading and it continues to discriminate against those without academic ability.

Teachers are products of a system that has rewarded what they could understand cognitively. Teachers value academic endeavor, for it has provided them with the status they enjoy. Schools reflect teacher values and, consequently, devices for grading include those biases and must be considered.

The argument has been made that school must have failure to help students learn of their individual differences. They will fail in life and should experience it in school so they may adjust to this situation. It is fair to say that failure is a fact of life, but what is crucial to teachers is to prepare children to deal with that failure. It seems reasonable to build on positive strengths in anticipation of the tests in real life as opposed to identification of inadequacy in one domain: the one that deals with skills in a classroom. Teachers are guilty of judging goodness on what they understand goodness to be and that is culture-bound to who they are: college graduate teachers. Schools do not realistically reflect society, so to generalize what happens in society by school experiences is generally superfluous. It is difficult to visualize a person who would seek out and enjoy endeavors that will produce failure and yet teachers arrange for students to experience it in school. Children are held captive by law while educators define success in terms of things they (teachers) understand and they (teachers) can achieve. Goodness is judged on a narrow band of academic skills and children generalize on who they are and on their self esteem by the school's criteria.

Classer and others advocate a success-oriented education building on students' strengths. Havighurst, Mackley, Bruner, Mead, and many others advocate use of the community since real tests on curriculum content take place there. Combining these philosophies, when failure does happen, there will be positive alternatives provided by teachers using a reality-based curriculum. The fundamental worth of individuals and their differences are retained with this approach and, hopefully, failure will not become generalized as a way of life.

While this direction is positive, a more definitive basis for the evaluation of human worth must be explored. If schools are to implement programs built around the stated philosophy, teachers must deal with the question of evaluation. While some feel real experiences in some cases justifies their doing, this attitude is not universal. The value system we operate upon seems to demand comparisons. It seems necessary to expand the domains we base judgments upon if opportunities for successful experiences are to be expanded.

The question is how do teachers allow children positive experience in growing and learning and yet let them learn about individual differences? A partial answer involves a change in the value system: value things people do and ways people feel as well as their thinking process. Educators should broaden the base they make judgments upon to allow for varying degrees of competence in feeling, doing, and thinking so children may deal with lack of ability in any one domain with compensating success in another. In this scheme of things, the opportunity for success is infinitely enlarged, for the combinations that go to make up different competencies people use in life are endless. It is not unreasonable that being weak in two or even all three could be positive in the sense that all types of people get along by certain balances of these characteristics, depending on their needs and society's demands. By using this approach, individual differences are allowed without the stigma of failure in one domain. People think, do, and feel to work through their lives. All these factors contribute to any person's definition of success or happiness.

Educators could structure curriculum and content to explore and offer related experiences in doing and feeling as well as thinking. This has been a difficult task due in part to the difficulty in grading these things. However, schools are not living in the past but in a dynamic, dehumanizing, machine/electronic age. Educators must do things that involve human beings in a real world, for the worth of "content" eventually must stand the test of "life" skills which involve activities outside of school. Humans do things, feel things, and think things usually in such mixed amounts it would be difficult to define any "most" important domain at any given time.

Career education offers a dynamic tool which may offer the teachers some alternatives. Career education is a series of processes (closely related to human development) that link real people in the real world of work (that includes all levels and all competencies) with school subjects to offer a reality base to test and reflect content in human terms. Man must work and he does! He is paid money for some of his endeavors while others he does for psychological reward. To study man and his purpose, school subjects must deal with man in his environment. Career education concept offers a vehicle to do just this.

THE POOR SCHOLAR'S SOLILOQUY

No, I'm not very good in school. This is my second year in the seventh grade, and I'm bigger and taller than the other kids. They like me all right, though, even if I don't say much in the classroom, because I can tell them how to do a lot of things. They tag me around and that sort of makes up for what goes on in school.

I don't know why the teachers don't like me. They never have very much. Seems like they don't think you know anything unless they can name the book it comes out of. I've got a lot of books in my room at home -- books like Popular Science, Mechanical Encyclopedia, and the Sears' and Wards' catalogs -- but I don't very often just sit down and read them through like they make me do in school. I use my books when I want to find something out, like whenever Mom buys anything second-hand I look it up in the Sears' or Wards' first and tell her if she's getting stung or not. I can use the index in a hurry.

In school, though, we've got to learn whatever is in the book and I just can't memorize the stuff. Last year I stayed after school every night for two weeks trying to learn the name of the Presidents. Of course I know some of them like Washington and Jefferson and Lincoln, but there must have been thirty altogether, and I never did get them straight.

I'm not too sorry though, because the kids who learned the Presidents had to turn right around and learn the vice-presidents. I am taking the seventh grade over, but our teacher this year isn't so interested in the names of the Presidents. She has us trying to learn the names of all the great American inventors.

I guess I just can't remember names in history. Anyway, this year I've been trying to learn about trucks because my uncle owns three and he says I can drive one when I'm sixteen. I already know the horse power and number of forward and backward speeds of 36 American trucks, some of them Diesels, and I can spot each make a long way off. It's funny how the Diesel works. I started to tell my teacher about it last Wednesday in science class when the pump we were using to make a vacuum in a bell jar got hot, but she didn't see what a Diesel engine had to do with our experiment on air pressure so I just kept still. The kids seemed interested though. I took four of them around to my uncle's garage after school and we saw the mechanic, Gus, tear a big Diesel truck down. Boy, does he know his stuff!

I'm not very good in geography either. They call it economic geography this year. We've been studying the imports and exports of Chile all week, but I couldn't tell you what they are. Maybe the reason is I had to miss school yesterday because my uncle took me and his trailer truck down state about 200 miles, and we brought almost 10 tons of stock to the Chicago market.

He had told me where we were going, and I had to figure out the highway to take and also the mileage. He didn't do anything but drive and turn where I told him to Was that fun! I sat with a map in my lap and told him to turn south, or southeast, or some other direction. We made seven stops and drove over 500 miles round trip. I'm figuring now what his oil cost and also the wear and tear on the truck -- he called it depreciation -- so we'll know how much we made.
I even write out all the bills and send letters to the farmers about what their pigs and beef cattle brought at the stockyards. I only made three mistakes in 17 letters last time, my Aunt said -- all commas. She'd been through high school and reads them over. I wish I could write school themes that way. The last one I had to write was on "What a Daffodil Thinks of Spring," and I couldn't get going.

I don't do very well in school in arithmetic either, seems I just can't keep my mind on the problems. We had one the other day like this:

> If a 57-foot telephone pole falls across a cement highway so that 17 3/6 feet extends from one side and 14 9/17 feet from the other, how wide is the highway?

That seemed to me like an awfully silly way to get the width of a highway. I didn't even try to answer it because it didn't say whether the pole had fallen straight across or not.

Even in shop I don't get good grades. All of us kids made a broom holder and a book-end this term, and mine were sloppy. I just couldn't get interested. Mom doesn't use a broom anymore with her new vacuum cleaner, and all our books are in a bookcase with glass doors in the parlor. Anyway, I wanted to make an end gate for my Uncle's trailer, but the shop teacher said that meant using metal and wood both, and I'd have to learn to work with wood first. I didn't see why, but I kept still and made a tie rack at school and the tail gate after school at my Uncle's garage. He said I saved him ten dollars.

Civics is hard for me, too. I've been staying after school trying to learn the "Articles of Confederation" for almost a week because the teacher said we couldn't be good citizens unless we did. I really tried because I want to be a good citizen. I did hate to stay after school, though, because a bunch of us boys from the south end of town have been cleaning up the old lot across from Taylor's Machine Shop to make a playground out of it for the little kids from the Methodist home. I made the jungle gym from old pipe, and guys made me Grand Mogul to keep the playground going. We raised enough money collecting scrap this month to build a wire fence clear around the lot.

Dad says I can quit school when I am fifteen, and I am sort of anxious to because there are a lot of things I want to learn how to do, and as my uncle says, I'm not getting any younger.

SUCCESS ORIENTED EDUCATION

Questions one might ask:

1. What is success?
2. How can we plan for success?
3. What will have to change to account for success education?
4. How do we go about that change?

1. What is success?

In school or out, success is satisfying achievement. It is the gaining of one's aim. It is the feeling of accomplishment and even pride that goes with being able to do the task. Conversely, failure is the inability to do the aimed for or assigned task. Which is the best motivator? Which will help students gain positive self image? Failure may have its learning value, but only when coupled with success. The questions here involve the definition of success and its use.

We talk a lot about motivation in education. What we mean translated is: educational motivation refers to ways we can get kids to accept our values and strive for success in things we deem important (we may call them life skills or content and we assume they are necessary for satisfaction in life). We define this (content) through our perspective and we structure the learning situation so that some achieve (success) and others fail. The basis for success or failure in school usually depends on competency in one domain: cognitive. This just happens to be the area of competency in which we as teachers have achieved.

The point is not that the content is necessarily at fault but that the method we employ to teach that content is questioned. In fact, we are actually unable to find out if the content is lacking or not because of the method.

The methods we use are inextricable from the values we as teachers hold and reflect that view of reality. We also make judgements on amount of content gained without varying the method (in the sense that all or almost all approaches reward a cognitive form) and thereby condemn to failure a group of students without academic skill. We also condemn the "successful" students to the narrow concept of success we have defined. Can we alter our approach (method) to broaden the base of exposure to content to include teaching of that content through doing (psycho-motor) and feeling (affective) as well as thinking (cognitive)? It is suggested we make judgements more reasonably on the students' gaining of content when we have allowed success through different competency strengths. Our goal as teachers must be to do our best to have all students learn the content we offer (be successful). Exploration of the valuing of doing and feeling as well as thinking allows potential success for every student for we all use these three domains in day-to-day activities. Usually we use them in such mixed amounts, it would be difficult to identify any most important one for a given (out-of-school) activity.

2. How can we plan for success?

We must get our best planners going exploring ways to change teachers to understand and value other value systems (this is not to say "accept" but to value). This is not an easy task. It is difficult, for teachers work in an environment that continually reinforces what the credentials they hold say is worthwhile and good. They have (because of an accident of heredity and environment) been rewarded with whatever rank of status they enjoy by attainment of cognitive credentials and feel no pressure to alter that value for others by the very nature of their endeavor: teaching others.* The inherent idea in the above is simply that the teacher knows the best answer, the right way, and the true course, etc., etc., etc. What a barren place to look for self-initiated change! Where is the incentive?

If we are to create an environment for change, we must alter our ideas about the school being the seat of all learning. If we talk about life skills, we must be willing to get in touch with life in the community and do some testing there. A reasonable question to ask any teacher might be: Is what you are teaching ever going to be of any value to your students? The trouble simply is that we have no model to get in touch with reality on an objective regular basis and we answer the above question ourselves in light of how we interpret that reality. If educators are unwilling to test out what they teach, how will we ever achieve a change in what they teach? The very ego strength of the educator tends to work against change. Even a more important questions might be: Who else has formally taken the responsibility for the giving out of life skill stuff but teachers? It would seem that we must broaden our definition of life to a reality-based model that will give us feedback and, therefore, allow for corrective change.

The model

The model or models that allow for change can be based upon a few basic elements: (1) The teacher personally will be involved in the process. The teacher will have an opportunity to reality test his/her value system, relate to others, and be given time and opportunity to discuss with peers and decide on alternate applications of the philosophy stated above on success. The teacher must be trusted for appropriate resultant action as he is closest to the problem and has the most alternatives for change in his area. He must be given adequate in-service on the concept of success and possible models, but then be allowed time to plan, write, and implement on his own. In this way we plan for the success of the changes. We do this by incorporating the management theme: people support what they help create. It seems reasonable, then, that we must somehow get the organization to accept and help change to come about and not try to block it. With teachers trying out their own approaches to solutions of the problems and an organization dedicated to helping change, growth will take place. By this procedure the ideas for change by the teacher will have a chance to be tried honestly.

(2) The community will be involved in this model for it is there where the action is. It is in the community where all workers work and people define success in many different ways. It is in the community where people put different

*NOTE: Obviously many teachers do not fit this definition as they have worried about similar concerns as the author has and have grown to value many interpretations of reality. This broadside is not meant for them.

degrees of value on the doing, feeling, and thinking of life. It is in the community where we as teachers can learn alternate definitions of success. In this same community we will be testing content humanly after we have used the community to learn alternatives to try out methods for success education.

We can plan on things not being the same. We can plan on resistance to change and we can plan on failure. It can be healthy feedback to fail if we can be reinforced that it isn't generalized failure and we can try other alternatives. Again that is a function of the organization and what it will allow.

(3) The main change to plan for is human involvement and recognition of varying human worth. Human involvement should be planned for both in the demonstration of content (the teaching) and in the evaluation of the same.

3. What will have to change to account for success education?

The three elements mentioned above will have to change: (1) Hopefully teachers will change in a self-actualizing environment; (2) The school as a concept will change as the community in effect becomes the classroom; and (3) The direction, method, and content will change as we incorporate humans at all levels with all competencies to both help us humanize content in the teaching and check it humanly for its worth to our students.

Content example

Examples are sometimes of value in clarification of a concept. Let us think of the content in a biology course as "wind" and a normal class with the full range of capacity as the subjects. The teacher's objectives are to have each student learn about the wind and how it helps us, hurts us, and otherwise affects our lives.

Let us concentrate on activities in relation to the teacher's objectives and see if we can uncover something that all the kids (at one point or another) could identify with and have success in.

1. Instead of buying a wind machine or tester, why not have students build one.

2. Observation of cloud patterns, blowing snow, or dust storms, etc., is a possible activity.

3. Pictures, drawn or taken, can help make points.

4. Interviews with doctors or allergy sufferers is an effective task for students.

5. Taking field trips to the weather service and interviewing a guest with interest or a job in the area are possible alternatives. (There are many doing, thinking, feeling tasks students can do related to these two activities).

6. Effectiveness of different clothing in relation to wind chill may be researched by watching TV or observations on a street corner.

7. Building design, hair styles, automobiles, crops, etc., are all areas to explore. Every area has people associated with it and every person in the area does things, feels things, and thinks things. To get in touch with these people we may use the world of work as an index or vehicle.

Just think of the things people do that relate to the wind.

We really haven't discussed the school books and references yet, but they have their place with the rest and should be explored. A creative teacher can build in success to every student's experience studying the wind and make it a rewarding experience by various means of communicating and demonstrating the content sought through affective, cognitive, and psycho-motor exploration of student capacity. Students are also happier when they are doing things they can succeed at. It remains the teacher's job to pull all these endeavors together and let fellow students benefit from individual strengths (heretofore unrecognized or unappreciated).

4. How do we go about that change?

Human beings, providing they represent all levels, will change us if we will allow ourselves to get in touch with them. Career education uses the world of work as a network of titles that in reality define life style and various sets of values people hold. Careers or endeavors (if you prefer) demand combinations of competencies in doing, feeling, and thinking. The status and money reward people gain in reality do not define any one of these domains as most important to their success all the time. For that matter, money and status are not everyone's "success" symbols. Career education offers us a non-discriminating vehicle to get in touch with all these different people with different competencies and different successes and gives us feedback on the worth of our content. Career education is a vehicle to a greater task, however, and that is the job of allowing for exploration of all endeavors relating to all competencies as potential success getters. We all do things and gain identity through these activities. Some of our doings we get paid for, others we do for psychological reward, still others are a combination of both. What is important seems to be that identity (and self-concept) rests with these doings. We drop failures but we repeat and add to successful doings. They eventually dictate a life style unique to each of us. This concept is key to educational motivation.

Summary

Can we as educators build models to allow success to all our students through teaching of our content? We must begin at once to test and try the valuing of all domains as process tools to help us teach our subjects, for in so doing we will be in a position to reward all our students with success as they interpret our content through their particular strength.

THE PROBLEM

The following article is a brief overview of some of the background that supports career development concept as a mission of our schools. Vocational education is a misleading term and causes confusion in discussion with parents, students, and educators. The following paper outlines reasons for change--in understanding, communication, and cooperation in our institutions, as it relates to students needs. A speech normally provides this phase to the educator; however, in the interest of making this package of materials complete "The Problem" is included here in written form.

CAREER DEVELOPMENT

Problem 1

Educators in the elementary and secondary schools do not accept the concept of career development as being a worthy mission of the school to the degree that they do human development (general education).

Problem 2

As a ramification of problem one there are positive signs of a dual school system evolving in our society. This movement (situation) discriminates against a large segment of students, is economically untenable, and is grossly inefficient in expediting the educational process.

"We can no longer tolerate an educational system (1) that ignores the world of work, (2) where occupational studies are considered inferior to general studies, and (3) where youngsters in vocational tracks do not receive the training necessary for entry into college and those in college preparatory tracks are denied a vocational experience which relates their learning to reality." (Feldman, 1:4-5)

Vocational Education legislation points the direction toward solution of this crisis: "The purpose of the Vocational Education Act (1968 amendment to the 1963 Vocational Education Act) is to begin the reconciliation between the work world and the school and between the academic and vocational curricula." (Pucinski, 2:6)

From the notes and working papers of the 90th Congress come recommendations that bear directly on the problem of dual schools.

> Vocational education, like general education, is a responsibility of the total school and cannot be limited to a single discipline or department. Each area must contribute its specialty to the ongoing career development of the student.
>
> While administrative responsibility for vocational education may be centrally directed, it is the responsibility of the administration to encourage, and to include, all elements of the school to contribute to the vocational commitment.

> Vocational education programs can be developed which serve as "non-blocking" career leaders, and they can be planned to be consonant with the goals of both general and vocational functions of education.
>
> This will require vocational planning which articulates between the levels of education and provides maximum opportunity for the student to attain his desired and optimum development. Through such articulation, the transition of the student to the next educational level or to work will be more efficient and effective. (3:368-369)

Congress challenged the educational establishment several years ago during the Kennedy administration by establishing many agencies to educate those whom the schools had rejected. Private industry teaching these students skills has cost the taxpayer millions and millions of dollars. At the present time the government invests four dollars in remedial manpower programs for each one dollar it invests in preventive educational vocational programs. (4:2-3) The expected outcome could have been that schools would stop discriminating against all those individuals who did not aspire to or qualify for college (about 80%). It did not work that way and education has evolved even further toward dual schools. This, in effect, means that educators are treating people unnaturally, assuming they can be either college bound or nothing. The millions of dollars being spent by private business, picking up where professional educators left off, continues. It is gaining public acceptance. This situation exists in a country where the federal government invests fourteen dollars in the Nation's universities for every one dollar it invest in the Nation's vocational programs. This situation exists in a country where sixty percent of its young people make the transition to the world of work with no education beyond high school. This situation exists in a country where by the 1980's it will still be true that fewer than twenty percent of our job opportunities will require a four year college degree. (4:1-3) The National Advisory Council on Vocational Education in its annual report dated July 15, 1969 makes the following recommendation to Robert H. Finch, Secretary, Department of Health, Education, and Welfare: "We recommend that the federal government immediately exercise its leadership and allocate more of its funds to cure our country of our national sin of intellectual snobbery." (4:1)

Many approaches to solving the problem are being attempted by politicians and educators. Some so-called "solutions" are contributing to the problem while others are a simple expression of frustration. Few are constructive to solution in and by themselves.

The symptoms of education's problem show up all around us. Any counselor can give the admission requirements to Harvard but not one in a hundred knows the apprenticeship requirements in Minnesota. The high drop-out rate in schools is tolerated. Tune out rate is very high but the students are blamed and not the relevance of the curriculum to reality. The curriculum in District 281 is highly academic and college orientated, yet here are the results of our follow-up studies:

1. 80% of seniors express intention of going on to higher education

2. 50% (average) start a college
3. 25% are left after one year
4. 20% + eventually receive baccalaureate degrees (5)

It is a constant struggle for relevance of curriculum to student needs within the schools. The results are as shown above. District 281 is a typical school establishment. There is discrimination against students who do not aspire to college as a function of the intellectual environment and our teachers set toward that means of "success." Of course, it also impedes progress toward educational relevance when teachers belong to the only profession the writer knows of that has no check on either the process or the products of its labors. They (teachers) are too quickly forgiven for being victims of a striving middle class set of values that was profitable for them but renders them sterile in dealing with students of unlike background. Most teachers strive for professionalism, and rather than criticize their behavior we should join in teaching teachers how to reach the goals listed in the typical comprehensive philosophy of education for a local district. District 281's philosophy of education:

> It is the fundamental belief of the faculty of Independent School District 281 that education in a democratic society should provide an environment in the public schools which will enable the pupils to acquire information, skills, and knowledge; worthy ideals and attitudes; and appreciations and understandings conducive to successful and fruitful living in a changing world. Inherent in this concept of education is the provision for self-realization according to individual needs, interests, and abilities.
>
> The school as an institution of our social order is organized to promote and perpetuate the fundamental aims, purposes, principles, and objectives of our democratic society. It is the function of the public school in a democratic society to take the children of all the people at the level at which they are and develop their abilities to the greatest extent through all school activities. (6:3)

The question that faces each school district at this time is: do they really want a comprehensive high school opportunity for their students, or put in another way, will they make good the promises they make in the statement of philosophy for their district? In order to fulfill the promise teachers must learn the value of the career development concept as a vehicle to that end.

Many things should be considered in arranging for educational opportunities for students in a local district. The status of a student if he chooses to be so isolated as to leave the school for education elsewhere is a very important consideration, not only among peers, but with professional staff as well. Regarding this we must constantly be reminded of current research in order to keep our direction relevant to student need. Governor LeVander, in a speech to the Fourth Vocational Governor's Conference, told of immediate needs in education as projected into post-high school educational considerations. He said our country can support about 20 percent of today's high school graduates as college graduates but needs 25 to 30 percent of today's graduates involved in post-high technical and vocational education.

(7:4) That still leaves 50 percent (in line with District 281 follow-up studies) who will have to shift for themselves on the education provided for them in our "comprehensive" high school. Governor LeVander urged the college presidents to look at the statistics and suggested that the "college mania" has gone too far when approximately 80% of our high schools reflect college preparatory courses when approximately 40% of our 18-year-olds go on to college and about half of those graduate. (8:3)

When educators build the new curriculum, they must think in terms of needs built on a system that considers factors related to the population, manpower, maturation, exploration, establishment of career, and growing old. In short, a system that makes all of us account for what we plan on doing by using clearly stated behavioral objectives and forcing educators to compare results with a criterion that has relevance in the real world. Professionals in education are not "mining" resources in the form of manpower for the country. Supply and demand factors of our economy along with change are the greatest determiners to a young person's future. We must allow freedom of choice of career by teaching fundamental transferable concepts and insuring that choice by the freedom of flexible educational preparation.

To do this we must examine the mission of the school We must somehow get teachers to accept the fact that empirical evidence does not support the need for the amount of college orientation our curriculum has. We must do everything in our power to rally the teaching talent of the schools behind systems like the one described above. We must have faith that honest evaluation of needs will give vocational education the appropriate amount of influence in the comprehensive high school curriculum. We in vocational education must not build empires of our new strength. We need to consider the ramifications of empire building in light of the consequences to future generations who need educating.

It is the writer's firm conviction that we must do all we can to prevent a dual school system and that we now possess the resources and tools to accomplish the task of having career development considered a responsibility of each teacher in the school. The task is getting vocational education into the mainstream of education. This should go a long way toward preventing the expansion of dual schools.

If we are to be a comprehensive high school then educators must get busy on changing our direction from two armed camps (academic vs. vocational) to coordination, cooperation, and the acceptance of responsibility for the needs of students by all teachers.

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INTRODUCTION

Ten critical areas of career education are explored in the following pages. These summaries are intended to be used as a discussion base for various groups interested in the concept and its implementation. The questions related to each area are: What is the desirability, practical probability, and practical limitations of each?

1. The concept of the awareness of self through work.
2. The concept of career orientation for all students.
3. The idea of career exploration as a part of the school program in career education.
4. The idea that one's career has importance to the individual and society is manifest in a variety of ways.
5. The idea of career preparation includes some basic cognitive, affective, and psychomotor skills desirable for all adults and specific skills necessary to satisfy the requirements of specific careers.
6. The idea that career education allows a different grading philosophy in our schools.
7. The concept that a teacher test the content he/she is teaching in a reality situation with human beings to determine its worth and value.
8. The concept that career education splits minority population support. Low socio-economic minority see the changed valuing of reality-based competency (including doings and feelings as well as school-related thinking for "success") as their chance to succeed. Highly educated "arrived" minority suspect that career education is just renaming all the rotten jobs to create the illusion of a better deal for minorities while at the same time keeping them down.
9. The interpretation of the concept by spokesmen range from content-based philosophy (career education is teaching about the world of work) to process-based philosophy (career education offers a human reality-based identity endeavor to test out and reflect the worth and value of school content).
10. The idea that a mature career decision is the goal of career education.

Cliff E. Helling	Donald Johansen
Director of Vocational Education	Director of Career Education Projects

WHAT ARE THE DESIRABILITY, PRACTICAL PROBABILITY, AND PRACTICAL LIMITATIONS OF:

1. The concept of the awareness of self through work.

Basic Idea. It has been suggested that a person finds himself in his work, he recognizes others through their work, and he seeks relevance for his life through his work or he becomes dissatisfied. The concept is not new--the idea that a person reveals himself through what he does rather than what he says is ancient.

Assumptions

1. It is a fairly well accepted idea that a person becomes what he desires to be. Self image determines behavior. Students are influenced in their self image by what they believe others see them as being or becoming.

2. We all tend to categorize and generalize from our own experience. If the only time we see a service worker is with dirty hands and disagreeable menial tasks, we may easily generalize that another worker in a similar career is a dirty, disagreeable menial person.

3. Our attitudes are influenced by personal experience. Achievement can result in personal pride and the lack of achievement can cause one to view himself as a failure. Experiences can be managed to program achievement and success.

Problems

1. There is an unconscious attitude that equates play and fun on one end of a continuum and work and drudgery on the other. It is easy to reinforce this by exhorting children to "stop playing and get to work."

2. Most teachers have had little or no personal experience with positive accomplishment and achievement associated with physical types of work. Academic achievement has been associated with a counterpart for work. Pupils have been led to believe that if they do not apply themselves to academic pursuits they will probably have to "work for a living."

3. Homes, neighborhoods, schools, and entertainment places (where most kids spend the majority of their time) usually do not include people on the job working as they recognize it. Fathers and others "go somewhere" to do something called work.

4. The school, the school room, and the curriculum have not been designed to include work or workers. Any kid's connection to workers has to be applied.

If the concept is feasible, think of ways it can best be achieved in the classroom. (What major obstacles must be overcome?)

WHAT ARE THE DESIRABILITY, PRACTICAL PROBABILITY, AND PRACTICAL LIMITATIONS OF:

2. The concept of career orientation for all students.

Basic Idea. There are some facts or information about careers which are necessary to know if one is to make sound decisions concerning them. This may be called the body of content concerning career education. Orientation is introduction and background type information useful for preliminary discussions and decisions. Orientation concerns the nature of clusters or relationships of careers because of some common element such as things, ideas, and people. It also stressed interrelatedness and interdependencies in a nondiscriminatory manner.

Assumptions

1. Career education is important to everyone because everyone has or will have a career.

2. Everyone has a right to choose his own career according to his own interests, abilities, and motivation.

3. A person's career selection should be based on a realistic conception of all aspects of that career.

Problems

1. The task of presenting all aspects of 35,000 D.O.T. jobs is unreal.

2. Isn't the selection of jobs for a career a personal matter involving families and parents, not for a school to force early selection?

3. A choice made by an impressionistic teenager will reflect youthful attraction to glamour and not to solid businesslike needs of a family man.

4. Most teachers do not have backgrounds to provide information about careers for their students.

5. Isn't the curriculum already loaded and there is no time for additional subject matter?

If the concept is feasible, think of three ways it can best be implemented in the classroom. How would you overcome obstacles?

WHAT ARE THE DESIRABILITY, PRACTICALITY, AND PRACTICAL LIMITATIONS OF:

3. The idea of Career Exploration as a part of the school program in Career Education.

Basic Idea. The Career Exploration element in Career Education is intended to open career possibilities to the student not ordinarily found in his experience. It is difficult to visualize oneself performing in a career in which one has no personal experience, which is one reason so many people enter careers also held by their fathers or other close relative.

Assumptions

1. One of the most easily available methods of providing Career Exploration is to arrange for observation of people performing in a work setting. This is usually called a field trip and can be efficiently accomplished

in groups. The impressions gained through a field trip are often strong enough to be remembered in detail even years later. A career exploration field trip often focuses on the people who are observed.

2. The conversations relating to a career, whether it is at the place of work, in a field trip or in the classroom through a career resource person, is a career interview. A career interview which concentrates on background, preparation, skills, likes, dislikes, opportunities, etc., is a way of exploring a career.

3. Actual work experience is vital to older students and people seriously considering a life career. Some careers require a certain number of years as an intern or apprentice. People in that career think that some skills must be learned on the job in an actual work setting under the guidance of another experienced worker. Teaching, medicine, plumbing, and clergy are some of these. Other benefits from work experience have universal value such as learning punctuality, dependability, consistency, feelings of worth, etc.

4. One benefit from Career Exploration is to discover the educational avenues leading to a certain career. This can be a big factor in making school subject matter take on an added importance. In other cases discovering education avenues gives academic goals more meaning. For example, a student may discover that a health worker uses information learned in science and also that a high school diploma is required to enter a technical course at a vocational school in order to qualify as an X-ray technician.

Problems

1. Arranging for a field trip which has meaning is not easy. It is time consuming and costly. It is often difficult to get permission from the right people and sometimes they are not aware of the purpose which in turn causes a waste of time and energy.

2. Not all careers lend themselves to meaningful observation. Many business and clerical careers have little visual impact. What benefits can one expect from watching a group of people sitting and working at desks in an office?

3. Work experience in an unskilled field has little to do with a highly skilled or professional career in the same field; e.g., an orderly at a hospital and a surgeon work at the same place, but it is not possible to get a feeling for one job by looking at the other.

4. Educational avenues are based on past experience and are rooted in history. Many of today's youngsters will be employed in careers that have not been invented today. Career observation and worker interviews are impossible in cases where the educational avenue has not been set.

If the idea above seems reasonable, how do you think it can best be achieved? How can the problems be overcome?

WHAT ARE THE DESIRABILITY, PRACTICAL PROBABILITY, AND PRACTICAL LIMITATIONS OF:

4. The idea that one's career has importance to the individual and society is manifest in a variety of ways.

Basic Idea. The continuation of our modern society as we know it seems to imply that a number of relationships in the division of labor, the interrelatedness of production, and the interdependence of services are necessary. Our institutions, organizations, and indeed our economy itself depend on members of society making productive contributions for its survival. A complicated system of money exchanges and economic theories are involved; but basically the need for society's members to produce goods and services is recognized.

Individually a person needs money to operate in society and most people have to work in some manner for that money. Beyond the money which is required for necessities to support life, the amount of money and the manner in which it is earned determines ones life style if not the quality of life itself.

Assumptions

1. The continuation of our economic system as we know it is desirable. Each member of society contributes to that system in an intricately interrelated manner while at the same time supporting several levels of government through taxes. The complexity of the system is not necessary to examine here but it is important to note that a person's career has implications for an entire society. This is true in such non-personal indicators as gross national product, national debt, supplies of food and fibre, and our fossil fuel resources.

2. Individually the imporatnce of one's career is illustrated by the amount of money one earns, thus determining his life style. Some people suggest that a person's career is a primary determinant in one's self awareness and esteem. I have heard people rather apologetically reply, "I am just a teacher"; however I've never heard anyone ashamedly announce, "I am only a Superintendent," or "University Professor," or "heart surgeon." On the reverse side, it seems the self esteem one brings to his career is reflected in the quality of performance. Some custodians take a great deal of pride in their work and it shows.

3. Some psychologists theorize that a healthy person needs to realize some accomplishment in his career if he is to gain satisfaction in his life. This means a person needs to understand how he is making a positive contribution in a worthwhile effort. A career can supply this need; however, some people find it in other places like volunteer work. It is a happy circumstance when a person finds this feeling of worth in his job.

Problems

1. Some people look at work as a necessary evil. They think we all have to do things we don't like and kids may as well learn early that they are going to have to work hard for what they get. "There is no free lunch."

2. Our economic system seems to be based on resource depleting and energy consuming production of more and more goods. Doesn't career education

merely support that concept which is heading for our own destruction?

3. Some people are destined to be captains and others to be crew, in fact our entire society is based on that concept. Career education sounds as if people could do anything they want.

If the idea above seems reasonable, how do you think it can best be achieved? How can the problems be overcome?

WHAT ARE THE DESIRABILITY, PRACTICAL PROBABILITY, AND PRACTICAL LIMITATIONS OF:

5. The idea of career preparation includes some basic cognitive, affective, and psychomotor skills desirable for all adults and specific skills necessary to satisfy the requirements of specific careers.

Basic Idea

Career preparation is generally those basic skills of general education such as communication skills in reading, speaking, writing, and listening in an appropriately effective manner. While it is readily agreed that the same degree of proficiency is not needed by all people in their adult pursuits, agreement is possible that a functioning adult member of society needs to be academically independent with regard to basic communication and arithmetic abilities. These academic skills underlie all future career preparation and successful interaction with society on or off the job. Specific skills related to a specific occupation are generally termed vocational and are easily identified for every occupation. The worker in medicine, religion, law, music, recreation, etc., all have cognitive, affective, and psychomotor skills peculiar to that job. The preparation for that job, whether it is obtained in a university or on-the-job is properly termed vocational education.

Assumptions

1. The achievement of basic educational skills, including the three R's as well as social consciousness, is to be considered the highest priority for elementary education. A sound basic education is still the basis for building a sound education in any career area.

2. The activities of career education, which may be carefully selected to coordinate with basic skills while appealing to the natural interests of students, can enhance the teaching of basic skills. The demonstration of the use of basic skills in selected careers can be the reality relationships which children want to connect school with the world.

3. Specific skills for specific jobs (vocational) are always based on a sound basic skill performance, i.e. scientist, mechanic, farmer, or stockbroker all need special mathematical skills related to their occupations, but rely on the same arithmetic skills learned in primary school on which to operate in their highly technical fields.

Problems

1. It is a natural reaction for a teacher to recognize the enormous

responsibility of teaching the basic skills to the extent other things take a secondary position. Some teachers who tend to overreact to this responsibility begin to think they have no time for anything but development of the basic skills.

2. It has been suggested that the introduction of relationships of skills used by a person in his career is the next thing to "vocational education"; something which should not be studied in the elementary school.

3. Suggesting that students study their own abilities, interests, and capabilities and pursue a career avenue leading to a compatible career somehow suggests "undemocratic" tracking to some people, i.e., the "rich get richer and the poor get poorer." The problem is real because of limited experiences of groups of people.

If the concept is feasible, think of ways it can best be achieved in the classroom. (What major obstacles must be overcome?)

WHAT ARE THE DESIRABILITY, PRACTICAL PROBABILITY, AND PRACTICAL LIMITATIONS OF:

6. The idea that career education allows a different grading philosophy in our schools.

Assumptions

1. Teachers judge excellence on academic endeavor, for it is what they understand best and what they use in teaching "their" subject.

2. Humans rely on competency in "doing" and "feeling" as much as thinking in trying to achieve happy, productive lives.

3. The integration of human interpretation to subject content (through career education, students get in touch with real people in real situations and doing endeavors) will force teachers and students to recognize other values and skills besides those taught in school.

4. If subject content were explored (and learned) with use of psychomotor, affective, and cognitive involvement arranged by teachers, all students could experience positive success in one or a combination of the above domains and yet still be informed of his/her individual differences.

Problems

1. Teachers teach the way they were taught in K-12 and in college. How can colleges change their preparation?

2. Teachers value what they know best and were best in -- how can we provide for them to value other competencies?

3. Some doing and feeling involvements can not be "graded" in the sense of competition. They maybe done to provide the student with information on his self-development. What does that do to our neat grading system?

4. Parents demand "marks."

5. Administrators demand "marks."

6. Students demand marks (because we have brainwashed them into using grades as indicators of worth). How about getting an F as a worth indicator?

7. Some educators believe that success education (building on strengths) is wrong and students must "fail" to learn their individual differences.

Is it possible to turn the process of evaluation around to be positive and student-centered?

WHAT ARE THE DESIRABILITY, PRACTICAL PROBABILITY, AND PRACTICAL LIMITATIONS OF:

7. The concept that a teacher test the content he/she is teaching in a reality situation with human beings to determine its worth and value.

Assumptions

1. It is assumed by parents that teachers are teaching students what they ought to know to get along in the world.

2. It is assumed by teachers that they know best how and what to interpret into life skills from the vast store of human knowledge.

3. It is not assumed by students that teachers or parents interpret reality better than they are able to.

4. It is assumed by professors that the content they transmit to prospective teachers is valid for whatever purpose either the professor intended or the teachers interpret it for.

5. Everybody assumes that somehow all this has some check on process or product -- it doesn't.

Problems

1. It is difficult to schedule community involvement without disrupting school schedules.

2. No one in the school is responsible for the evaluation of content in reality terms. Someone may try to evaluate in terms of lesson plans, discipline problems, or test results, but these are all "internal" criteria.

3. Teachers are safe to do what they please; why subject themselves to checks and evaluation that may change curriculum and technique?

4. Some teachers are frustrated that the other teachers or the organization is unwilling to change. They may see this as a viable means to change toward student need and distrupt the system in the process.

5. The community does not understand its role in this endeavor unless it is carefully planned.

6. Teachers often cannot cope with feedback from reality that contradicts their perception of reality.

Career education offers the vehicle for getting in touch with people in reality situations and reflecting their interpretation of value relating to various school endeavors. Do educators dare to use it?

WHAT ARE THE DESIRABILITY, PRACTICAL PROBABILITY, AND PRACTICAL LIMITATIONS OF:

8. The concept that career eduation splits minority population support. Low socio-economic minority see the changed valuing of reality-based competency (including doings and feelings as well as school-related thinkings for "success") as their chance to succeed. Highly educated "arrived" minority suspect that career education is just renaming all the rotten jobs to create the illusion of a better deal for minorities while at the same time keeping them down.

Assumptions

1. The government may assume the idea is catching on. (It's your guess what their hidden agenda is.)

2. The minority population seems split on the worth of the trend.

3. Most advocates of the concept of career education seem to ignore the situation.

Problems

1. Is it an advantage to minorities either way?

2. What quarter is support most needed from?

3. What has career education done so far?

WHAT ARE THE DEISRABILITY, PRACTICAL PROBABILITY, AND PRACTICAL LIMITATIONS OF:

9. The interpretation of the concept by spokesmen ranging from content-based philosophy (career education is teaching about the world of work) to process-based philosophy (career education offers a human reality-based identity endeavor to test out and reflect the worth and value of school content).

Assumptions

1. The content-based people feel that the integration of world of work examples into curriculum will give students many alternatives and a great deal of data to deal with the career decision-making process. It also makes content relevant to what they are going to do someday.

2. The process-based people acknowledge the data and facts as important elements but stress that identity of individuals depends upon what they do totally. This includes work they are paid money for as well as things they do for psychological reward. They stress positive success experiences with human beings and see career education as an avenue to humanize content as well as test its worth in reality settings. They may say that people in careers offer a reality framework to teach human development and its accompanying life skills.

Problems

1. This causes confusion across the United States, in districts, and between individuals.

2. The content-based people come off well with vocational educators for some even equate vocational education and career education.

3. The process-based people have trouble communicating what they are talking about. Most teachers relate to specific data rather than philosophic discussion, especially where there is limited time to devote to in-service.

4. Materials that are developed are not uniform, nor can they be used by all.

5. A split movement splits its support.

Should we move one way or the other or is there a happy middle ground?

WHAT ARE THE DESIRABILITY, PRACTICAL PROBABILITY, AND PRACTICAL LIMITATIONS OF:

10. The ideas that a mature career decision is the goal of career education.

Basic Idea. A mature career decision is one that is made by a person taking into account his own ability, interests, capacities (cognitive, affective, psychomotor), and the reality of the world of work. It is hoped that this mature career decision be made at the most advantageous time for an individual. This requires a thorough understanding of the preparation process in the career cluster of one's interest. At an early age a child may recognize he is interested in the medical services cluster. As he discovers more about this field, explores work in the field, examines requirements for jobs, etc., he will make more and more definititve career decisions at succeeding steps in his preparation. This is in contrast to the youngster who "wants to be a ______." Quite often the "I want to be a __________" statement is based on what is considered to be a glamorous job and unfortunately sometimes the work is disappointing.

Assumptions

1. A mature career decision is based on knowing one's self -- as far as one's ability. It is dishonest to encourage a student to strive beyond his ability to achieve. This leads to disappointment. It is useful to have high ideals and lofty goals, but they need to be real, or when the truth of limitations is realized a great disappointment will follow.

2. Interests in careers can take the form of interest in the product or service involved in the career, interest in the relationship with other people involved, and/or interest in the ideas or concepts involved in the career. For example, on a scale of 1 through 3 a railroad engineer might rate 3 on interest in railroads, 1 on interest in people, and 1 on concepts; while a minister might rate 3 on service, 3 on relationships, and 3 on concepts; a city bus driver might rate 2 on product, 2 on popele relationship, and 1 on concepts.

3. The psychomotor requirements of a career must be compatible with one's capacities or a rude awkaening is in store for anyone making an immature career decsion. A person who has some physical desirability must take that into account. A job requiring certain types of manual dexterity or physical stamina needs to employ people with commensurate capacity. A mature career decision takes this into consideration.

4. The present and future market in a career is vital to decision making. A future farrier must realize how many horses require shoeing. A potential teacher should understand how the declining birth rate is affecting teaching positions. At the same time a decision should take into account that new careers are opening all the time. By the year 2000, two-thirds of today's kindergarten students will fill jobs not in existence today according to the United States Department of Labor.

5. The ability to make decisions is developed from gaining experience in the practice of making decisions. In the lementary school this takes the form of recognizing one's values. Valuing need not be prescriptive. In fact the practic of recognizing vlaues and examining why we hold them is the clarification needed to produce a skilled mature decision maker.

Problems

1. A career decision sounds as if it is undemocratic to some people. They rebel against anything that puts people into categories. They revolt against "tracks" and they believe "anyone has the opportunity to pursue any career."

2. The task of mature career decision making is so awesome that we can't begin to deal with it properly and so it is better left to the guidance department and parents or some later time in high school.

If the idea above seems reasonable, how do you think it can best be achieved? How can the problems be overcome?

PHASE II

DEFINITION OF CAREER DEVELOPMENT CONCEPT

The following data defines the concept of career education and offers various materials that may be of value to educators in understanding and translating this process into practical applications in the school.

For too long we have said things like "All work has dignity," "all jobs are worthy," "all productive labor is good." This is not true! There are rotten jobs, degrading work, and unrewarding labor. This new concept (career education) teaches that people have dignity, people are all worthy, and people are good. Just think -- we have a chance here to change our value system in favor of humans and their needs. If people are good and worthy then whatever they do (a job) will be a demonstration of this worth and dignity. C. Helling -- From a speech to the New Hampshire Vocational Association April 27, 1973

CAREER DEVELOPMENT CONCEPT -- CHANGE AGENT

Introduction

Across this country a sweeping revolution is taking place in our schools. At every level students are demanding "relevance." Educators and parents are demanding "relevance" also, but are concerned about "order" and "process" as well. "Relevance to what?" might be the question to explore first. Most would agree that school should concern itself with relevance to reality. The interpretation of reality by educators is being questioned at this time and rightly so. The stagnant quality of our neglected educational system, at last being challenged for its margin of error in preparation for life, can no longer be tolerated. Its hang-up on teaching the middle class value system (most teachers come from the middle class with little work experience and expertise in only one career pattern: the college route to being a teacher) does not prove out in our follow-up research on students. Schools, lacking evaluation of either process or product, have evolved to a dual track with the positive reinforcement going toward those that aspire toward a college education. Teachers, counselors, and parents have come to regard college as an end in itself, rather than a step along the career ladder. Research for our district indicates it is a step for only about 20 percent of our students at that. Career development concept, as an integrated K-12 program, seeks to bring education to the reality of the world of work at all its levels and do it in a non-discriminating way. It may be the link that bridges the gap between theory and practice and allows us to relate our curriculum to people as they work and live. Career development is the integration of self and society, through work, lasting one's entire life.

The Problem

Educators in the elementary and secondary schools do not accept the concept of career development as being a worthy mission of the school to the degree that they do general education.

As a ramification of problem one there are positive signs of a dual school system evolving in our society. This movement (situation) discriminates against a large segment of students, is economically untenable, and is grossly inefficient in expediting the educational process. Marvin Feldman says it well:

> "We can no longer tolerate an educational system (1) that ignores the world of work, (2) where occupational studies are considered inferior to general studies, and (3) where youngsters in vocational tracks do not receive the training necessary for entry into college and those in college preparatory tracks are denied a vocational experience which relates their living to reality."

Dual schools within our public schools (academic versus vocational) as well as outside the public schools (vocational schools and federally-sponsored vocational programs through business as opposed to our "college" network) offer the evidence that we do not provide for comprehensive educational needs of our citizens but put them in dehumanizing tracks that discriminate socially as well as educationally.

Career education is humanizing education for only humans have careers. For this reason it may offer some solutions to the social and educational problems existent in our society.

Career Develop Concept -- Career Development -- Career Education

The career development concept (CDC) is the overall theory dealing with career development including all components and ramifications thereof. Career development is a process of growing and learning about self and how it relates to the career roles played out during one's lifetime. How are we to know who we are if it is not through "doing" and allowing the rest of society to reflect their attitude back to us in relation to these activities? Who we are is what we do (think and feel) and we demonstrate this in our doing (working) roles. The writer's broadest definition states career development is: "the integration of self and society through work lasting one's entire lifetime." It may be useful for the reader to think of career development concept as being represented on a continuum from content to process. The content side would represent specifi skills and knowledge relating to jobs and the world of work. The process side represents operations, procedures, and involvements that relate the world of work to our association in society and our own self-development. Work, whether paid for by money or psychological reward, is a vehicle for the demonstration of who we are in our world. It is through work's processes that we may achieve a framework for self-development and learning of life skills encompassed by the content of our subject curriculum areas. The use of career development concept, then, may range from "content" (teaching the world of work) to "process" (using the world of work to test and reflect subject content).

Career education in this context refers to either world of work content taught or the processes of career development used to teach school subjects. We must not use the terms career education, career development, and career development concept interchangeably. We only have access to parts of the process of career development and students are ready for various content only as they develop in our educational system. Those components we use or teach from the world of work may be termed career education. The career concept offers a framework to test out human development processes in real-life situations.

Clustering Concept

Cluster concept has far-reaching ramifications in making education more effective in terms of student needs. Since this "method" of clustering transcends career education it deserves discussion here.

It is the writer's feeling that schools are discriminatory both toward so-called "college bound" and "non-college bound" by predetermination of their career direction based upon a narrow band of academic capacities. In order to break this discrimination we must have a non-discriminating model to allow education to present its content unbiased by the teacher's set or other existent circumstances.

The clustering (sometimes called family or grouping) concept allows exploration of careers based upon common factors or components of several occupations grouped together. All competencies including psycho-motor, affective, and cognitive as well as interest alternatives are included in this grouping. Therefore, the person may compare his interests, abilities, motivation, and opportunities to a range of occupations held together by some component other than "academic!"

There may be many ways to define clustering, but for discussion's sake, the writer suggests two main categories: (1) organizational and (2) personal. Each has its purposes and they overlap in function. Organizational clustering furnishes a system to look at specific jobs held together and related to all other jobs in some logical way. This enables educators and individuals to plan awareness, exploration, orientation, and preparation in a reasonable way. An example of organizational clustering is represented by the HEW's 15 clusters representing all jobs. Another example of organizational clustering is demonstrated in Helling and Hale's "Career Planning Guide," where students explore integrated (professional and vocational) information and educational opportunity references. These are examples of clustering nondiscriminatingly for the purpose of providing structure for curriculum or some other organized educational or personal activity.

The second kind of clustering is "personal clustering." This model depends more on the concept of offering a range of examples (which is nondiscriminating) based upon personal need or interest. The writer sees it as a powerful teaching tool, certainly related to career education but having impact across all lines in education given the creative teacher to implement it. At any grade and in any subject there is opportunity to present material based upon personal need and interest. It is the teacher's job to expand thinking and promote analysis in a logical fashion. Personal clustering model expands thinking around the interest or need to include a range for exploration. If a third grader were interested in trucks, a creative teacher may suggest (in many ways and through many activities) that there are engineers and inventors who design trucks, there are workers who build trucks, there are people who fix trucks and drive them and fill them and paint them and direct them, etc. In this way trucks (analagous to any content) may be humanized and related logically by career processes.

It is the writer's philosophy that "content" can only be defined when it is related to humans, for if it has no use or involvement by people, why teach it? In this context personal clustering is a vehicle to that end.

The point simply is that we can arrange curriculum offering to be nondiscriminating by clustering of concepts, careers, opportunities, ideas, and offerings.

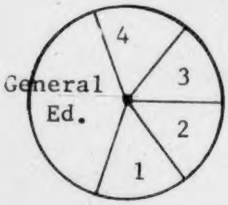
The inter-relationship of these two clustering patterns (organizational and personal) offer many alternatives for use in education.

Career Education and General Educators

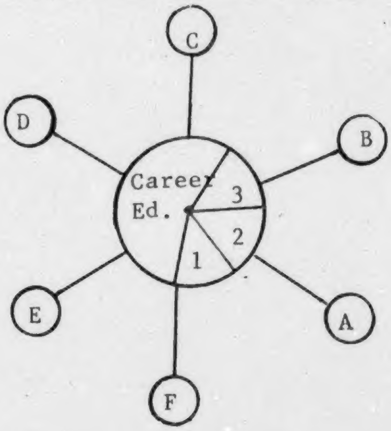
Career education is the implementation of various elements of the content and/or process of career development concept into the educational system. Let us concentrate upon the process in this discussion. The real power of career education is simply that it offers educators a chance to relate their subject to the world of reality. Educators have done a fine job of developing the core content of their respective areas. CDC offers process tools to make that transfer of content to students more effective. Career education involves a comparison of content to reality through its activities -- a chance for educators to appeal to the interests and needs of their students in a real way in the real world. Students turn on when they see school work related to the real world and in turn that excites teachers. Once started, career education is self-reinforcing.

Career is certainly related to almost all aspects of our lives. Since this relationship exists, career becomes the vehicle to carry effective teaching into the areas of general education the creative teacher associates with it. Career makes the jump into reality; once we're there, great things become possible in communicating with kids. The spin-off from the vehicle of career must include those vital things each teacher holds as priorities in what we might call life skills. If career education allows a resource to be available and the discussion and learning revolves around comparative religion or Indian culture or human rights or locomotives, the mission of education is reached. We must trust teachers to know what must be taught in each area. We have in CDC the tools and the vehicle to allow for more effective teaching. The dual mission of the educator is (1) teaching content and (2) relating it to life.

First Responsibility of Education: Subject Content



Second Responsibility of Education: Relate Subject Content to Life and Living of Student



Content in relation to:

1. Skills of the subject
2. Philosophies of the subject
3. Theory and application of the subject
4. Etc.

Content in relation to:

1. Career and self concept
2. Career and community
3. Career awareness
4. Occupational information
5. Orientation to careers
6. Career exploration
7. Career testing
8. Occupational selection
9. Skill development
10. Occupational establishment
11. Occupational adjustment
12. Occupational enhancement
13. Career retraining
14. Etc.

Content in relation to spin-off of:

A. Teachers' content priorities
B. Life skills
C. Cultural involvement
D. Leisure activity
E. Human development
F. Etc.

To sum up then, each teacher has a dual mission in his/her responsibility to students. It consists of (1) teaching the concepts, philosophies, and applications that may be termed germain to their subject and its understanding by the student. They also have the responsibility (2) of relating that subject content to life and living of the student. They cannot assume this transfer of relevance of their subject is automatic. The relating of their subject to life is a difficult matter. Career is not all of life but certainly the most important interrelated aspect we can identify; it is closely related to identity and self-development and the other elements we can name are understandable in their relationship to career. Therefore, a nondiscriminating vehicle for their second responsibility becomes career education.

General Career Education Parameters

Several groups of people have tried to define career education. Recently directors of vocational education from all 50 states gathered for this purpose. From one of their working papers comes the basis for the following definition. The writer has edited and added to these points and they seem to reflect a consensus in definition as well as his view of the concept.

1. Vocational education is an important part of career education, but career education is not synonymous with vocational education. Vocational education is the saleable skill component of career education.

2. Career education enhances, rather than supplants, all educational programs. It serves as a vehicle to improve the learning process.

3. Career education should be an integral part of the present structure of all schools.

4. Career education involves all subjects, all students, and all educators.

5. The implementation of career education is dependent upon the commitment from all levels of the community, government, and institutions of higher education.

6. Career education involves extensive orientation and exploration of occupational opportunities.

7. Career education emphasizes individualized instruction and student involvement in career attainment.

8. Career education humanizes the educational process as it encompasses the self concept and its relation to the world.

9. Career education is a continuum that begins with preschool and extends throughout formal employment as well as other associations in the environment.

10. Career education contributes to student incentives, aspirations, and achievements by providing a reality-based, human frame of reference for the learning of content material.

11. Career education includes specific preparation for occupations through vocational education or other appropriate educational experience.

12. Career education develops realistic mature occupational choice.

13. Career education promotes positive attitudes toward all useful work including psychologically rewarding endeavors.

14. Career education permits each student to realistically assess personal attributes as a part of setting life goals.

15. Career education provides a means of articulation from grade to grade and level to level.

The inclusion of the above points are offered as merely a general review and should not be considered complete. The following objectives and components are offered in the same context.

General Objectives of a Career Education Program (K-12)

1. Makes school and school subjects more relevant to all students in terms of life and work after school.
2. Aims to reduce student drop-out rate through a curriculum that relates subject matter to real career situations.
3. Assists students in their career and educational plans.
4. Prepares all students on an equal nondiscriminating basis, whether pursuing post-high education or another route toward life's work.
5. Lends to a cooperative working relationship and linkage among all staff members and at all levels by providing a consistent reality-based back drop for consistently relating school subjects through the grades.
6. Includes all kids, all levels, all educators, and all subjects in a school.
7. Brings about community involvement with schools.
8. Operates at minimum cost to districts for it involves attitude change toward the teachers' mission and depends on teacher implementation.
9. Acts as a humanizing nondiscriminating vehicle for education (all have careers).
10. Puts career foremost, which in turn puts emphasis on the development of the self concept and the individual.

Components of a Career Education Program

Numerous areas should be explored and contributions from many quarters considered. some questions of relevance before starting a program may include:

1. Community or school survey?
2. Advisory committees (teachers, students, businessmen, etc.)?
3. Where to start and what grades to include?
4. How to involve all teachers?
5. How to utilize business, industrial arts, and home economics?
6. What is the counselor responsibility?
7. Personnel and planning?
8. Materials?
9. Utilization of the community?

10. Exploration opportunities?

11. State department direction or help?

12. In-service for staff?

13. Evaluation?

14. Coordination throughout the system?

15. Attitudes of all concerned?

Some Elements of an Operational Program

There are literally hundreds of questions that should be noted when a new program such as career education starts in a district. There are no models in this new area. We haven't scratched the surface of potential as yet. In the Robbinsdale Area Schools, Independent School District 281 (suburbs of Minneapolis), we have been working on the questions mentioned and evolved to a career education "program" involving these components:

1. A nine credit in-service teacher education program is offered during the summer. It lasts six weeks (mornings only), involves 15 to 18 field trips and personal discussions in businesses in our general area. This course is open to all levels and disciplines and operates in small groups which in turn develop their own objectives from the data and experiences provided. This has operated for five years.

   This model is used for a five-credit, three-week institute also available to our staff. The emphasis in this course centers on curriculum development. (See appendix I-II-III.)

2. Coordinators of cooperative education have accepted the additional task of serving as K-12 career education consultants and materials disseminators. This (or some) delivery system is a must, since contact with teachers is essential in the learning process. At this time we also are reaching a point where there is a very great deal of teacher and program material available. (See appendix XIV.)

   Counselors offer a fine resource for change agents since they are experts in self-development, which parallels career development process. However, any teacher or administrator that turns on may become an effective change agent.

3. Career days have been initiated through the guidance department. (It is represented here as one of many operational involvements possible.) A junior or senior high school department (i.e., science) gives up its classes as a captive audience while many resource speakers are brought in representing many aspects of a related field (i.e., health occupations). All students in the school are welcome to fill in until the sections are full. Junior highs are offering mini-courses in career clusters and career days also. (See appendix V.)

4. We have developed an integrated list of six clusters of occupations with 500 lesser clusters around these six. All careers (ranging from laborer to professional) will be represented and enable the student to consider

job clusters narrowing to a more specific career. It is programmed on computers and in hard back so that the 500 lesser clusters break out into 5,000 main job titles. Along with the title, information and resources are given and also all educational opportunities available in Minnesota, including colleges, vocational schools, apprenticeships, and private schools. This guide aims to break the dualism and let students explore free of the pressures relating to required education until a relevant time in their planning. Many other uses for this resource are being integrated in various areas. (See appendix IV.)

5. We deemphasize having a formal vocational department. This would only frustrate the goal of comprehensiveness and somehow implies that career education can be separated from general education. Career education belongs in the main stream of education and separating it may enable insecure teachers an opportunity to scapegoat responsibilities they must accept in relating their subjects to the reality of the world. The cooperative coordinators (DE, OE, T&I, HE, WE) report to their parent departments regularly and also meet with the vocational director. (See appendix XIV.)

6. An exemplary project to develop community resources for use by the school and vice versa is operational. At this writing, over 1,500 resource people and numerous field trip opportunities are available free for our teachers. It is coordinated through the central office. This program also has established an evening avocational program and opened our schools to the public through "the lighted school" or "community schools" programs. (See appendix V.)

7. Exploration (related to the community affairs operation above) is beginning in one of our junior high schools. Two disciplines a month devote a week to career implications and the last two days of that week will be devoted to speakers and exploration visits into the community. This is hoped to be the model for other schools in our district. (See appendix XIII.)

8. Career development labs have been planned and begun at each senior high school and several junior high schools. They are equipped with materials and supplies for resources for students and teachers alike.

9. We have a three year exemplary project relating career development with environmental science on a K-12 basis. A great deal of in-service education has been implemented in the first phase (elementary) of this program. As a part of the program, a community career vocational counselor that deals with dropouts and adults is available. This position allows for testing and counseling as well as serving as job clearing house for the entire community. An evening high school completion program for dropouts and adults has been established through this office. It is called the Community Career Center and is located at the old New Hope Village offices. (The offices were donated by the village as good faith in the project.) (See appendix VI-X.)

10. An exciting program of career education through industrial arts in the elementary schools is being implemented. The premise of this program really involves industrial arts as a tool to help the elementary teacher better teach her subjects rather than as an additional subject. It injects the psycho-motor domain into the activities of the elementary school utilizing career development concept as the vehicle. (See appendix VII.)

11. A real breakthrough in the concept, relating to career development being the vehicle to let subject matter teachers better teach their subject, has

come through math. About 600 senior high students in general math are on "Career Related Math" at this time. This course consists of 55 individualized units in 15 clusters that utilize career exploration as the means to teach the concepts math people want taught. Geometry (career related) writing has also been completed and is being initiated in the senior high schools. (See appendix VIII.)

12. Career related writing of curriculum is being done on many levels. Notable are the communications units and the materials developed for the "lower one third" at Cooper's Inner School. (See appendix VIII.)

13. The writer teaches an on-site career development course around the state. He has been collecting units based upon the seven dimensional behavioral objectives developed by a government project at the University of Minnesota in 1966. Since the writer was involved in their development and understands their potential, they serve as a fine basis for curriculum development. About 500 of these projects are packaged as resource material to help coordinators and others communicate the "vehicle" concept to cross discipline educators. (See appendix IX.)

14. Hosterman junior high school has involved the entire school in a comprehensive three-year project that integrates the theme of career through the community, parents, business, resource people, a pupil potentials lab, and the subject curriculum. The project provides the student a continuity from class to class, year to year, and subject to subject. (See appendix XIII.)

15. We have proposed an entire school, devoted to our most inadaptive students, be operated upon the career education basis explained early in this article. A four dimensional curriculum (communications-technical-social-arts) will be integrated with the clustering concept to make education come alive for this group we have offered little to in our system.

16. We are working to achieve a closer working relationship with the University of Minnesota department of educational psychology, the vocational division at the University, and our school district. It is hoped that we will have an intern program that has been developed in our district enlarged by the next school year.

17. It is our philosophy that sharing of materials cannot just be "allowed" for but must be "provided" for as an integral part of program development.

    Vocational conferences, teacher gatherings, in-service training, and other interdiscipline and inter-school meetings must be utilized in dissemination and exchange of technique and materials related to career education. In this way we will aid each other to grow in competence with this new concept.

We may consider our cooperative programs as being career education as we may consider the adult program or the writing teams working on curriculum for career education in various areas. Perhaps the mini-courses in career education (career clusters) should be included as well as several other projects. The point is made here that if a staff is emotionally dedicated to the premise set down early in this article about career education, the sky is the limit. At some point in this changeover, we quit calling career education a program and start calling it our curriculum. That day may not be too far off.

GENERAL DEFINITION AND ROLE

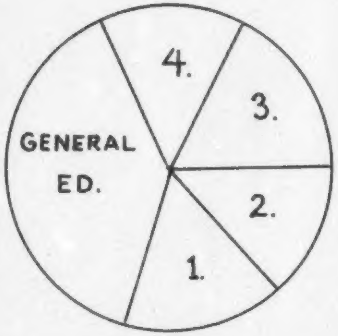
I. Career development is an ongoing process of integration of self and society, through work lasting one's entire life.

II. Career development is every teacher's responsibility. Every teacher must teach for transfer of their subject into the real world. Teachers cannot assume that students will make the relevance interpretation on their own.

III. Career development curriculum must be developed by each teacher as that teacher's subject content relates the area to careers, clusters of careers, jobs, parts of jobs, and/or the world of work in general.

DUAL ROLE OF THE GENERAL EDUCATOR

I



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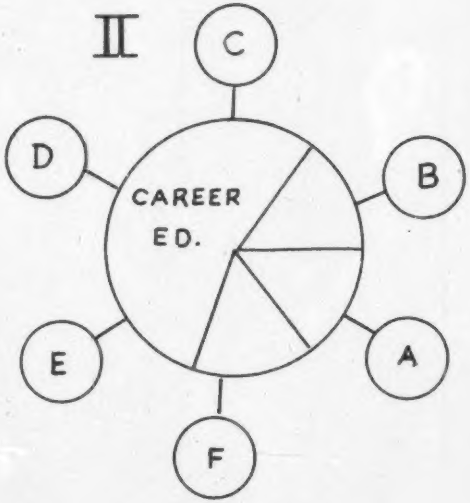

Content in relation to:

1. Skills of the subject
2. Philosophies of the subject
3. Theory and application of the subject
4. Etc.

Content in relation to:

1. Career and self concept
2. Career and community
3. Career awareness
4. Occupational information
5. Orientation to careers
6. Career exploration
7. Career testing
8. Occupational selection
9. Skill development
10. Occupational establishment
11. Occupational adjustment
12. Occupational enhancement
13. Career retraining
14. Etc.

Content in relation to spin-off of:

A. Teachers content priorities
B. Life skills
C. Cultural involvement
D. Leisure activity
E. Human development
F. Etc.

General Objectives of a Career Education Program (K-12)

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3. Assists students in their career and educational plans.

4. Prepares all students on an equal nondiscriminating basis, whether pursuing post-high education or another route toward life's work.

5. Lends to a cooperative working relationship and linkage among all staff members.

6. Includes all kids, all levels, all educators, and all subjects in a school.

7. Brings about community involvement with schools.

8. Operates at minimum cost to districts for it involves attitude change toward the teachers mission and depends on teacher implementation.

9. Acts as a humanizing nondiscriminating vehicle for education (all have careers).

10. Puts career foremost, which in turn puts emphasis on the development of the self concept and the individual.

SEVEN DIMENSIONS OF CAREER EDUCATION

1. Evaluates his interests, abilities, values, needs, and other self characteristic as they relate to occupational roles.

2. Explores broad occupational areas in terms of opportunities, potential satisfactions, required roles of workers and other related dimensions.

3. Explores the psychological meaning of work and its value in the human experience.

4. Understands modern work organization and its agglomerate milieu.

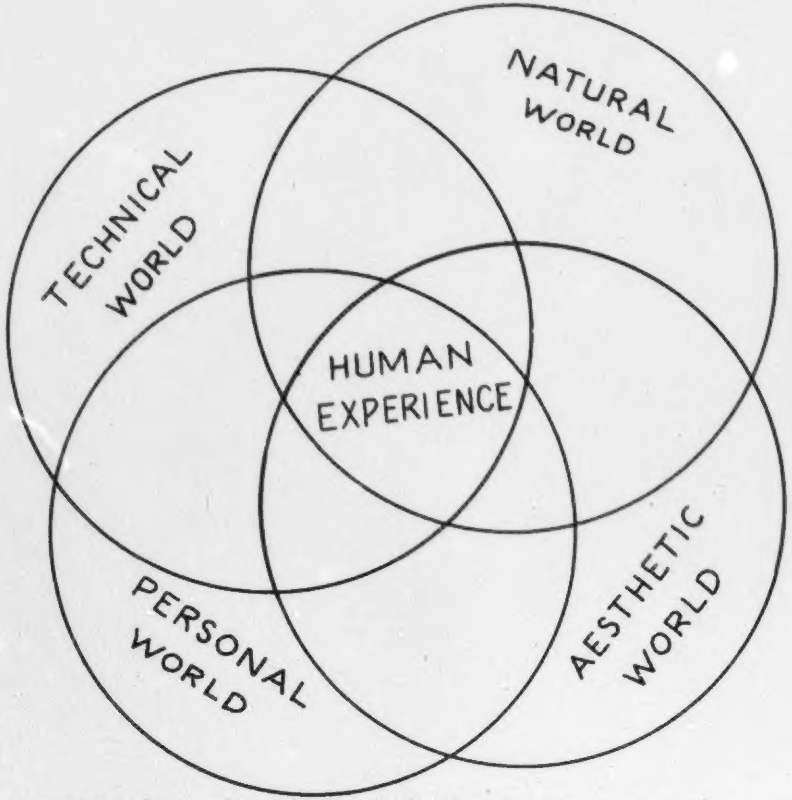
5. Possesses an awareness that the individual's role in work is tied to the well-being of the community.

6. Exhibits planfulness in striving to achieve occupational goals and objective.

7. Through his work-relevant behavior shows that he is acquiring a concept of self as a productive person in a work-centered society.

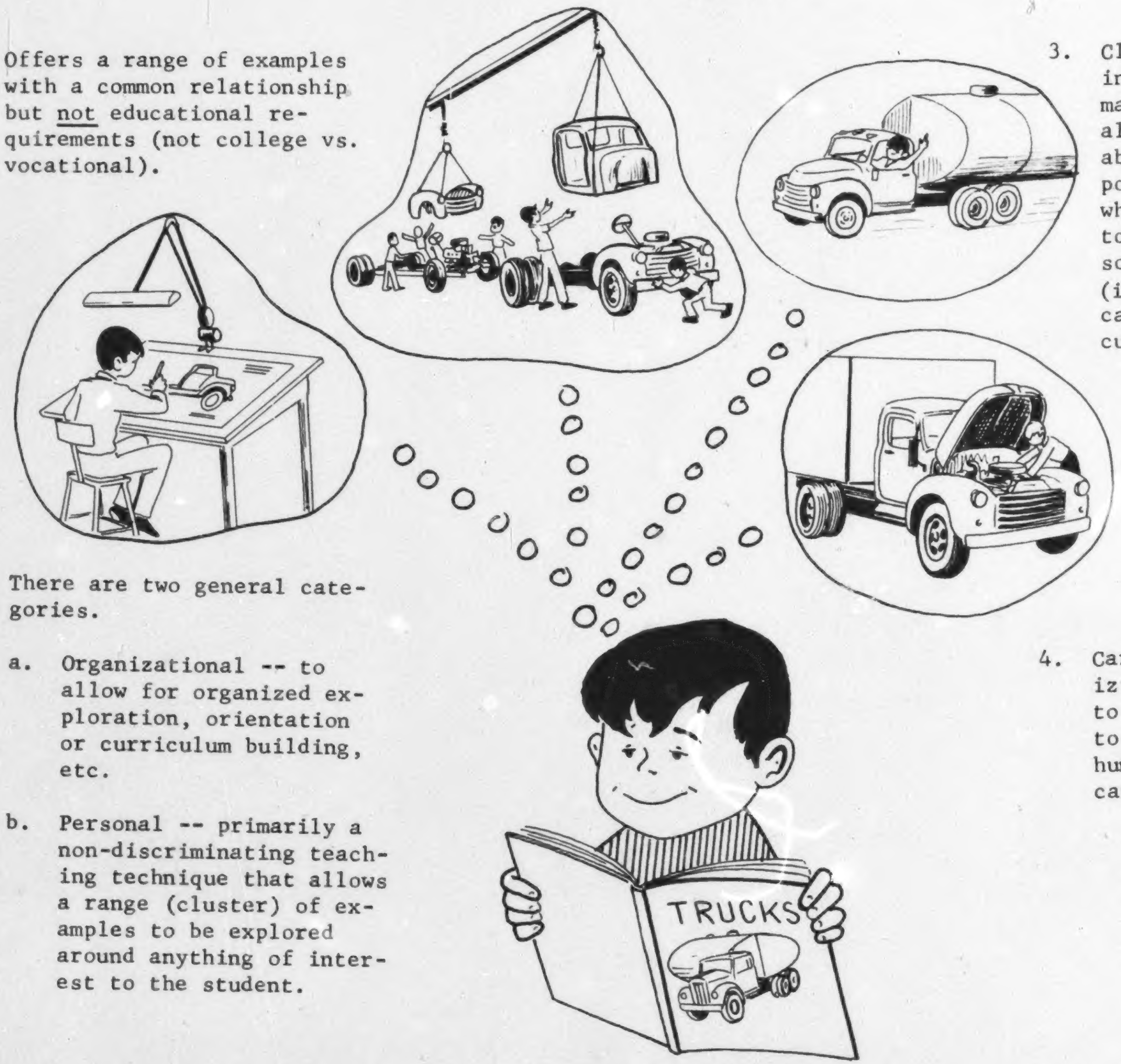
Note: These general goals are the basis for the career education objectives listed in Phase III.

CLUSTER CONCEPT


NATURAL WORLD
TECHNICAL WORLD
HUMAN EXPERIENCE
PERSONAL WORLD
AESTHETIC WORLD

All things may be clustered into these four groups. Educators must consider their goals in relation to these clusters and their overlap in the human experience.

CAREER CLUSTERING
CONCEPT



1. Offers a range of examples with a common relationship but not educational requirements (not college vs. vocational).

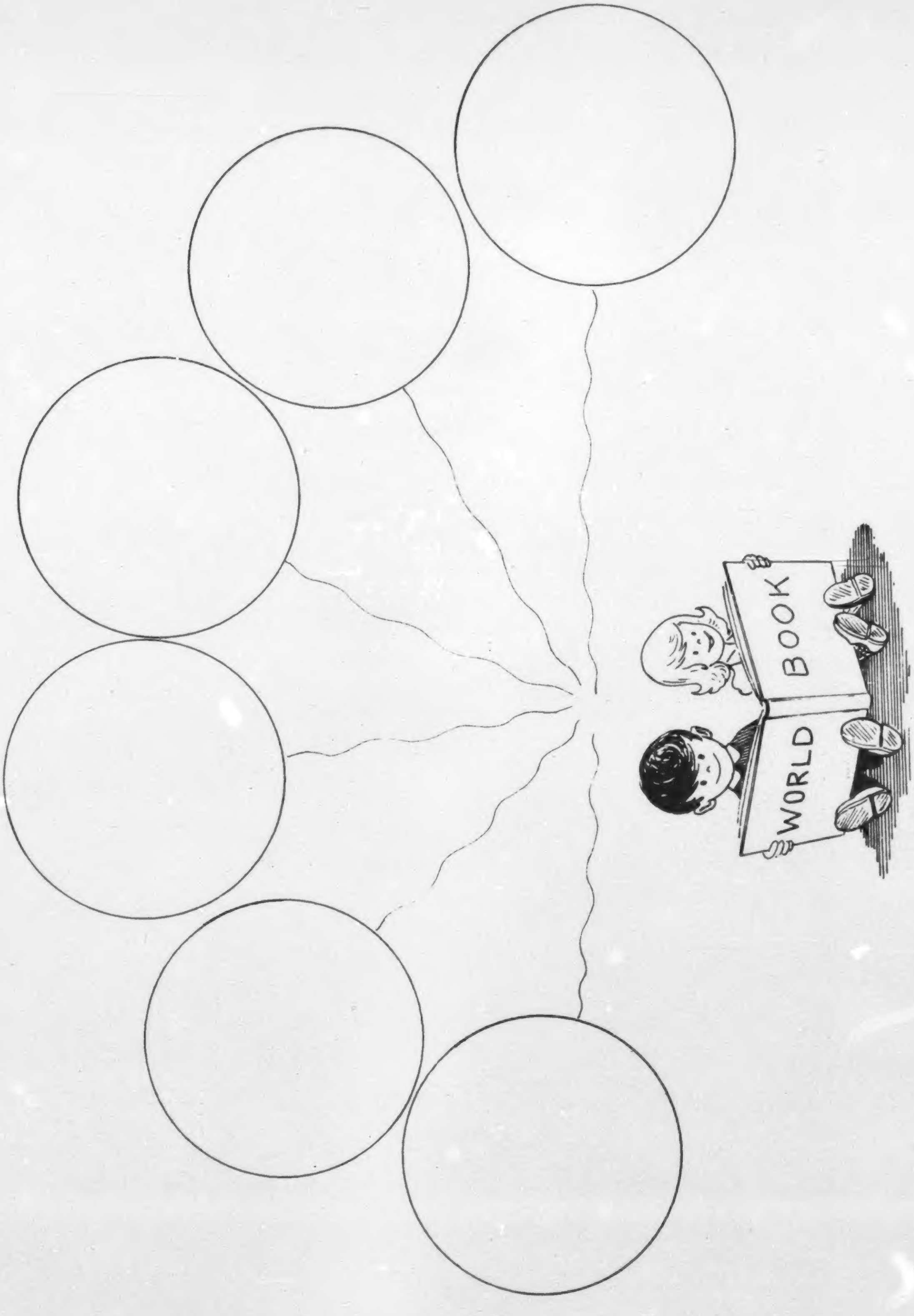
2. There are two general categories.

    a. Organizational -- to allow for organized exploration, orientation or curriculum building, etc.

    b. Personal -- primarily a non-discriminating teaching technique that allows a range (cluster) of examples to be explored around anything of interest to the student.

3. Clustering is non-discriminating because students explore many careers that involve all levels of education, ability, interest, and opportunity. They relate to who they are by being exposed to the range of careers around some common element. (i.e. construction, health, cars, food, clothes, agriculture, etc.)

4. Career clustering is a humanizing element for the content to be represented fairly and to allow it to relate to humans as only humans have careers.


WORLD
BOOK

ORGANIZATIONAL CLUSTERING CONCEPT EXAMPLES

HELLING AND HALE

Agriculture, Fishing, Forestry, Environmental, and Ecology Occupations

Distribution, Education, Entertainment, Managerial, and Business Administrative Occupations

Health, Medicine, and Related Occupations

Home Economics and Personal Home Service Occupations

Clerical, Business, Office, Law, Communications, Public Service, and Transportation Occupations

Skilled, Technical, and Engineering Occupations

H.E.W.

Agri-Business and Natural Resourses

Business and Office Occupations

Communication and Media

Consumer and Homemaking (Related Occupation)

Construction

Environmental

Fine Arts and Humanities

Health

Hospitality and Recreation

Manufacturing

Marine Science

Marketing and Distribution

Personal Services

Public Services

Transportation

OREGON

Mechanical and Repair Occupations

General Clerical Occupations

Basic Marketing Occupations

Agricultural Occupations

Food Service Occupations

Construction Occupations

Secretarial Occupations

Electrical Occupations

Social Service Occupations

Graphic Arts Occupations

Health Occupations

Metal Workers Occupations

Bookkeeping and Accounting Occupations

Wood Products Occupations

WYOMING

Agriculture Production and Related Occupations

Construction Occupations

Distributive Occupations

Electricity-Electronic Occupations

Family and Community Service Occupations

Graphic Communications Occupations

Health Occupations

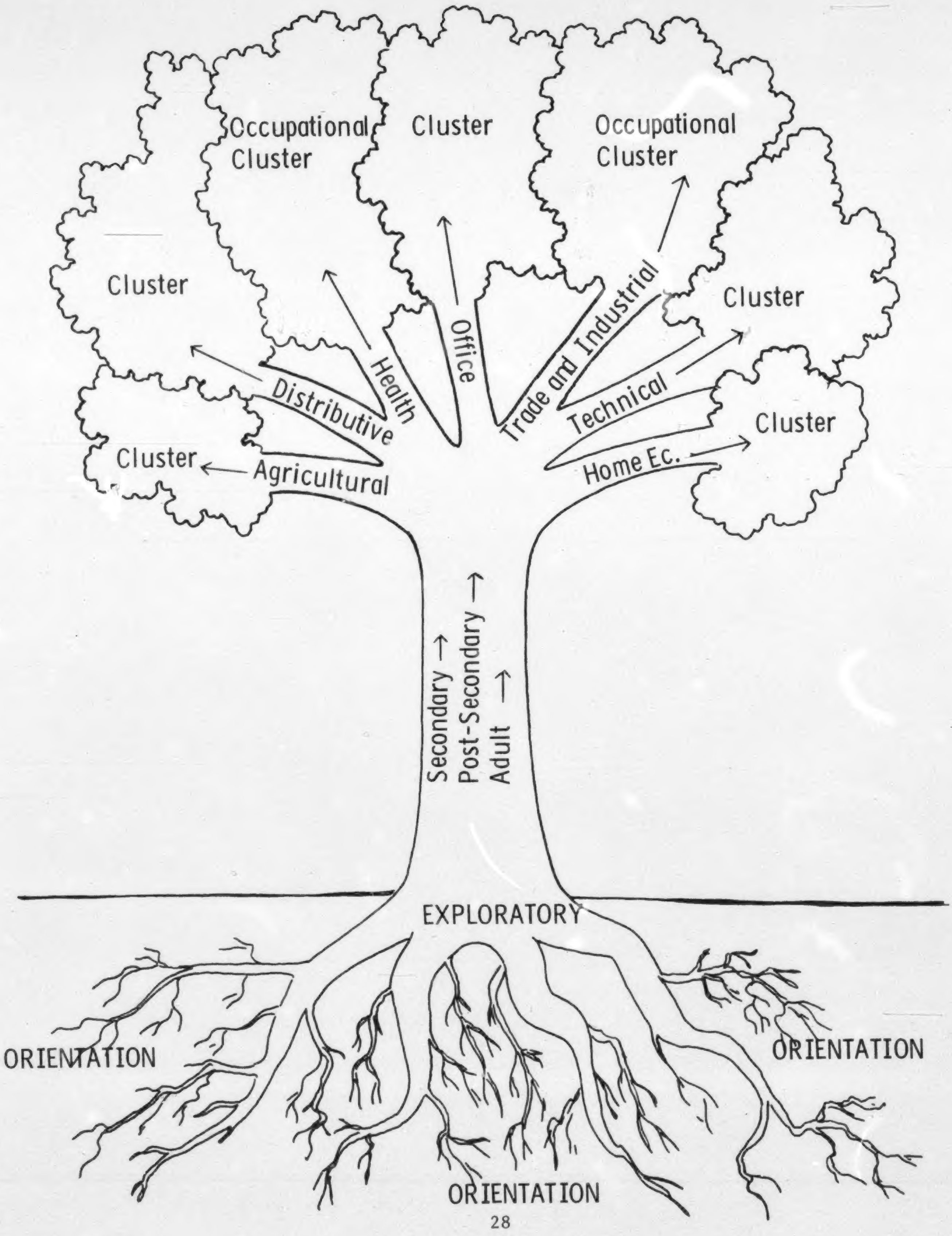
Hospitality Occupations

Metal Processing Occupations

Office Occupations

Transportation Service and Repair Occupations

CAREER DEVELOPMENT EDUCATIONAL TREE (K-12)

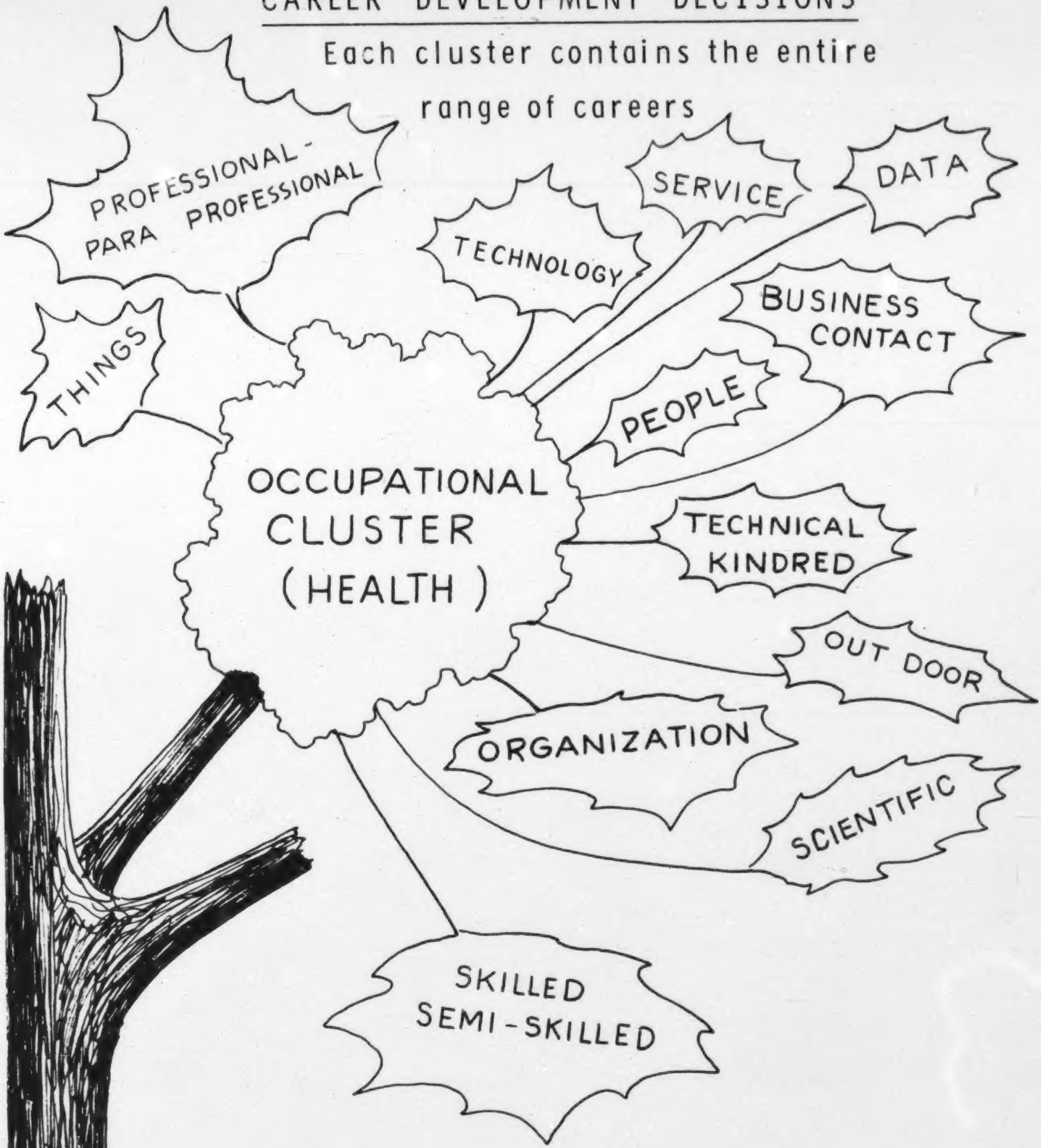


Occupational Cluster
Cluster
Occupational Cluster
Cluster
Cluster
Cluster
Cluster
Agricultural
Distributive
Health
Office
Trade and Industrial
Technical
Home Ec.
Secondary →
Post-Secondary →
Adult →
EXPLORATORY
ORIENTATION
ORIENTATION
ORIENTATION

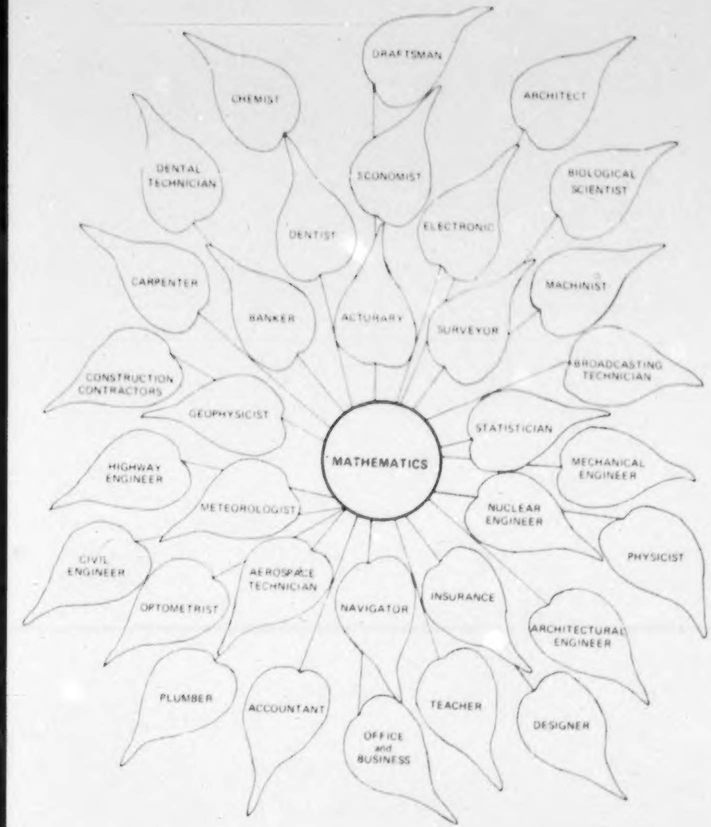
Post High School Education

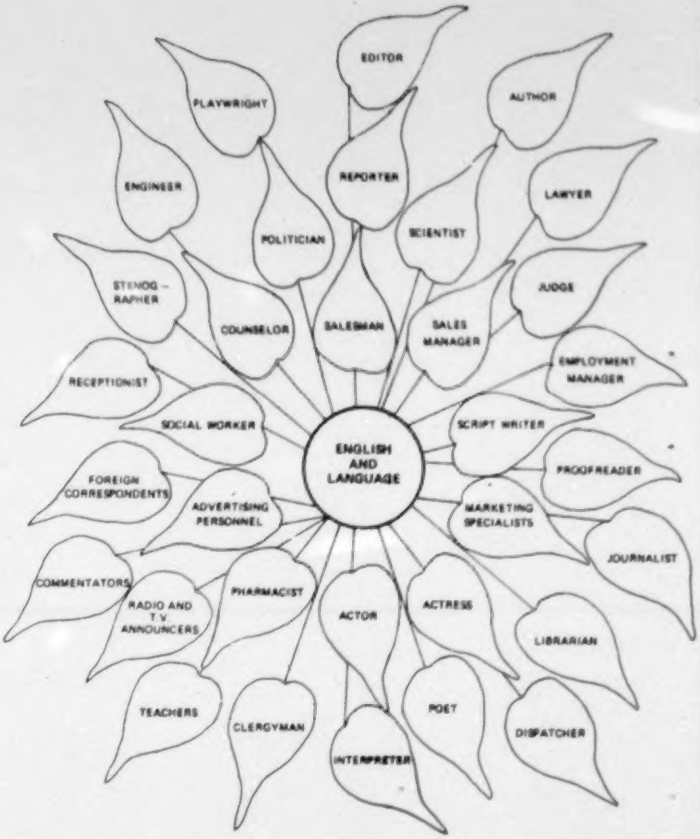
CAREER DEVELOPMENT DECISIONS

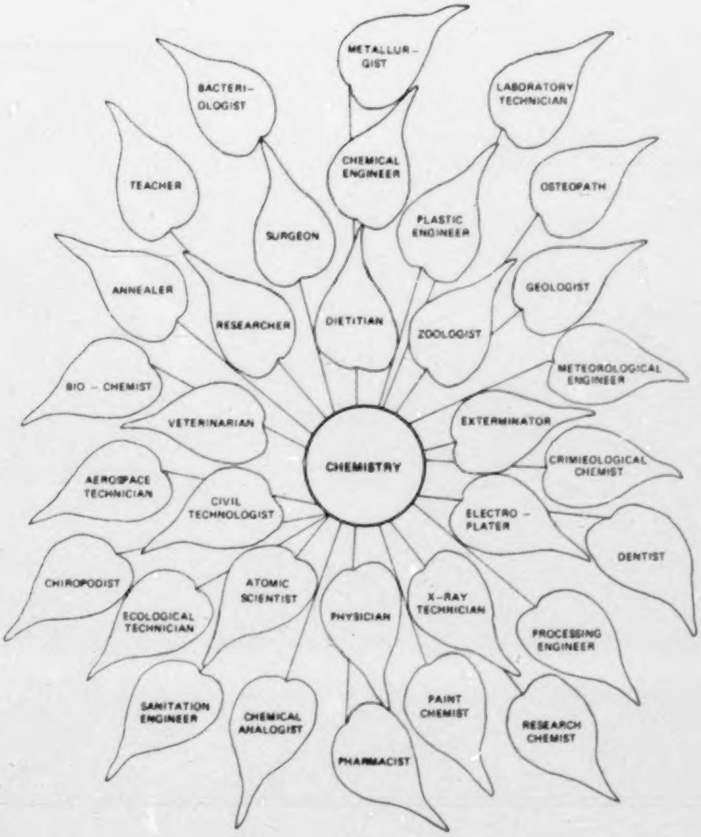
Each cluster contains the entire range of careers

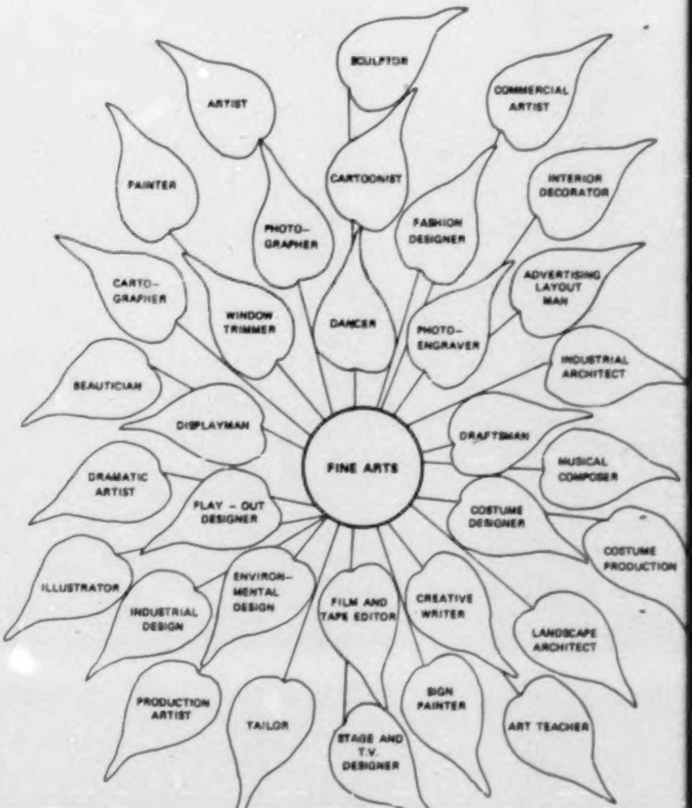

PROFESSIONAL-
PARA PROFESSIONAL
SERVICE
DATA
TECHNOLOGY
BUSINESS CONTACT
THINGS
PEOPLE
OCCUPATIONAL CLUSTER (HEALTH)
TECHNICAL KINDRED
OUT DOOR
ORGANIZATION
SCIENTIFIC
SKILLED
SEMI-SKILLED

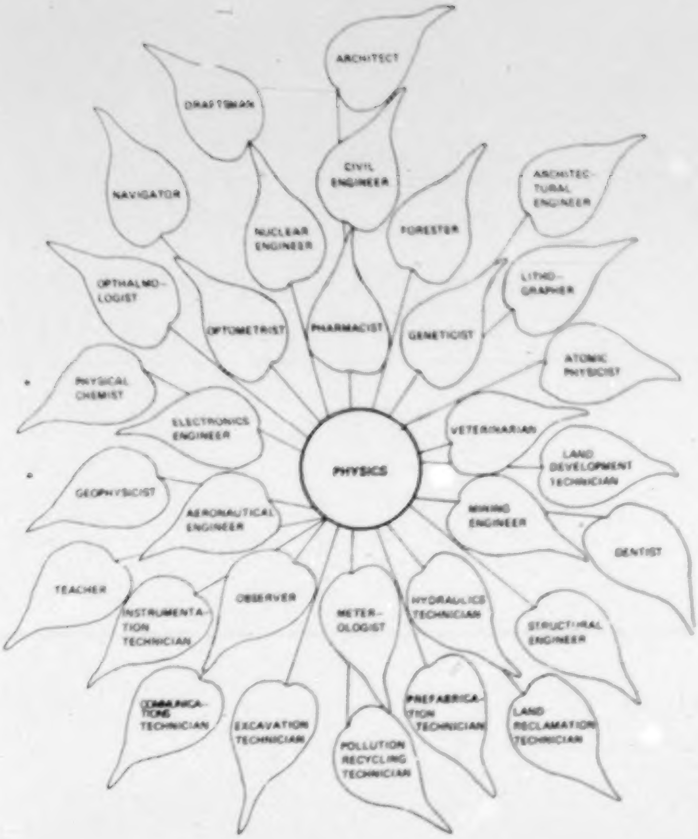
HOW DOES IT RELATE TO YOUR SUBJECT:
MATH, SCIENCE, SOCIAL STUDIES, ART, BUSINESS,
PHY. ED., INDUSTRIAL ARTS, ETC.?

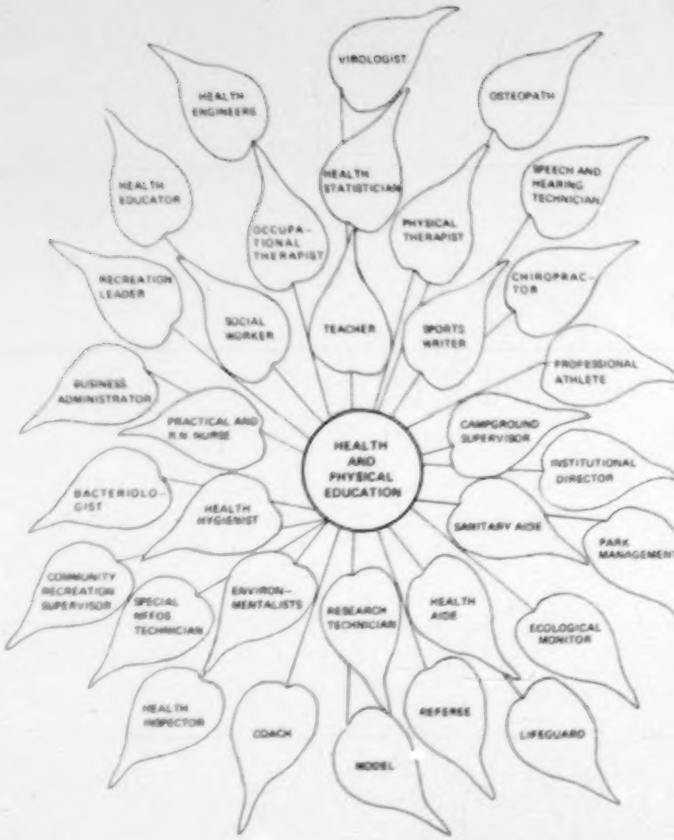

MATHEMATICS
DRAFTSMAN
CHEMIST
ARCHITECT
DENTAL TECHNICIAN
ECONOMIST
BIOLOGICAL SCIENTIST
DENTIST
ELECTRONIC
CARPENTER
BANKER
ACTURARY
SURVEYOR
MACHINIST
CONSTRUCTION CONTRACTORS
BROADCASTING TECHNICIAN
GEOPHYSICIST
STATISTICIAN
HIGHWAY ENGINEER
MECHANICAL ENGINEER
METEOROLOGIST
NUCLEAR ENGINEER
CIVIL ENGINEER
AEROSPACE TECHNICIAN
PHYSICIST
OPTOMETRIST
NAVIGATOR
INSURANCE
ARCHITECTURAL ENGINEER
PLUMBER
ACCOUNTANT
TEACHER
DESIGNER
OFFICE and BUSINESS

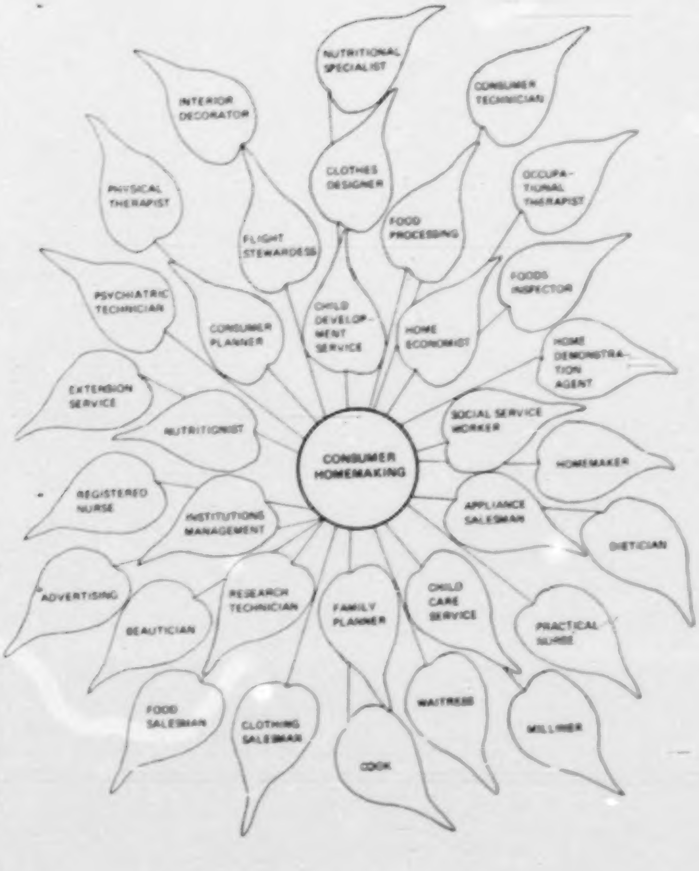

ENGLISH AND LANGUAGE
EDITOR
PLAYWRIGHT
AUTHOR
REPORTER
ENGINEER
LAWYER
POLITICIAN
SCIENTIST
STENOG - RAPHER
JUDGE
COUNSELOR
SALESMAN
SALES MANAGER
RECEPTIONIST
EMPLOYMENT MANAGER
SOCIAL WORKER
SCRIPT WRITER
FOREIGN CORRESPONDENTS
PROOFREADER
ADVERTISING PERSONNEL
MARKETING SPECIALISTS
JOURNALIST
COMMENTATORS
RADIO AND T.V. ANNOUNCERS
PHARMACIST
ACTOR
ACTRESS
LIBRARIAN
TEACHERS
CLERGYMAN
POET
DISPATCHER
INTERPRETER

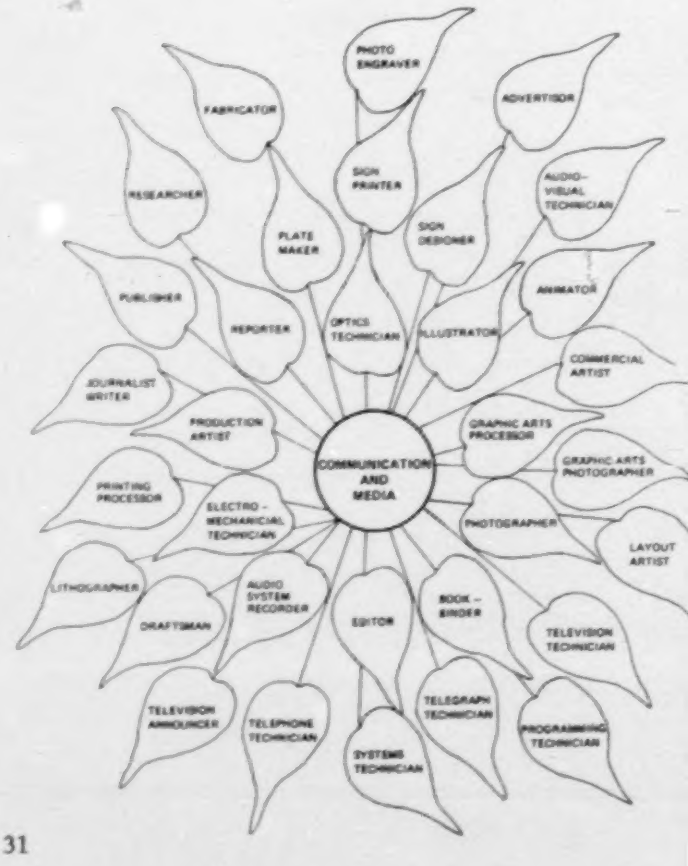

CHEMISTRY
METALLUR - GIST
BACTERI - OLOGIST
LABORATORY TECHNICIAN
CHEMICAL ENGINEER
TEACHER
OSTEOPATH
SURGEON
PLASTIC ENGINEER
ANNEALER
GEOLOGIST
RESEARCHER
DIETITIAN
ZOOLOGIST
METEOROLOGICAL ENGINEER
BIO - CHEMIST
VETERINARIAN
EXTERMINATOR
CRIMIEOLOGICAL CHEMIST
AEROSPACE TECHNICIAN
CIVIL TECHNOLOGIST
ELECTRO - PLATER
DENTIST
CHIROPODIST
ATOMIC SCIENTIST
X-RAY TECHNICIAN
ECOLOGICAL TECHNICIAN
PHYSICIAN
PROCESSING ENGINEER
SANITATION ENGINEER
CHEMICAL ANALOGIST
PAINT CHEMIST
RESEARCH CHEMIST
PHARMACIST

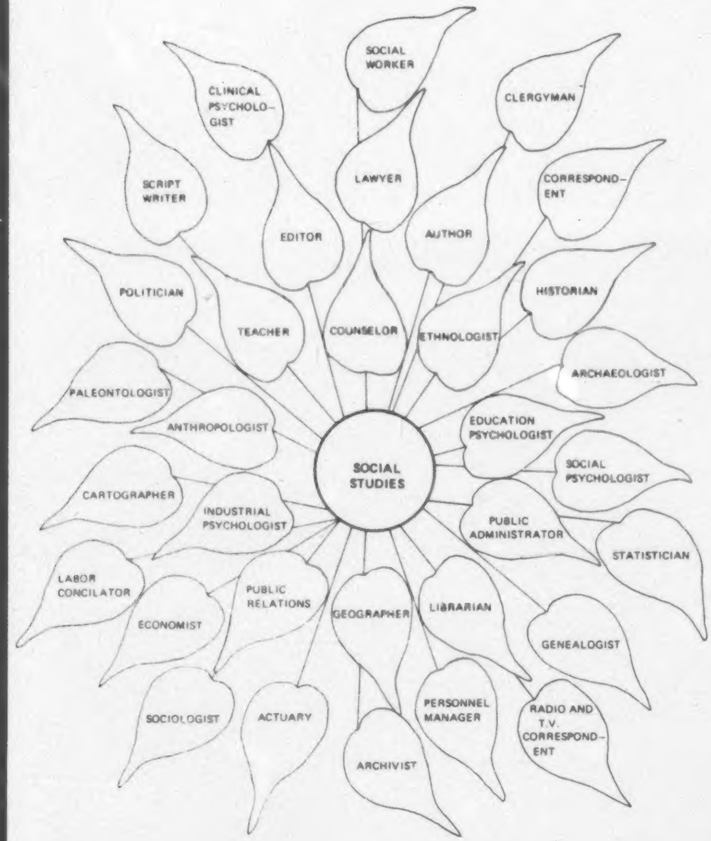

FINE ARTS
SCULPTOR
ARTIST
COMMERCIAL ARTIST
CARTOONIST
PAINTER
INTERIOR DECORATOR
PHOTO- GRAPHER
FASHION DESIGNER
CARTO- GRAPHER
ADVERTISING LAYOUT MAN
WINDOW TRIMMER
DANCER
PHOTO- ENGRAVER
INDUSTRIAL ARCHITECT
BEAUTICIAN
DISPLAYMAN
DRAFTSMAN
MUSICAL COMPOSER
DRAMATIC ARTIST
PLAY - OUT DESIGNER
COSTUME DESIGNER
COSTUME PRODUCTION
ILLUSTRATOR
ENVIRON- MENTAL DESIGN
INDUSTRIAL DESIGN
FILM AND TAPE EDITOR
CREATIVE WRITER
LANDSCAPE ARCHITECT
PRODUCTION ARTIST
TAILOR
SIGN PAINTER
ART TEACHER
STAGE AND T.V. DESIGNER

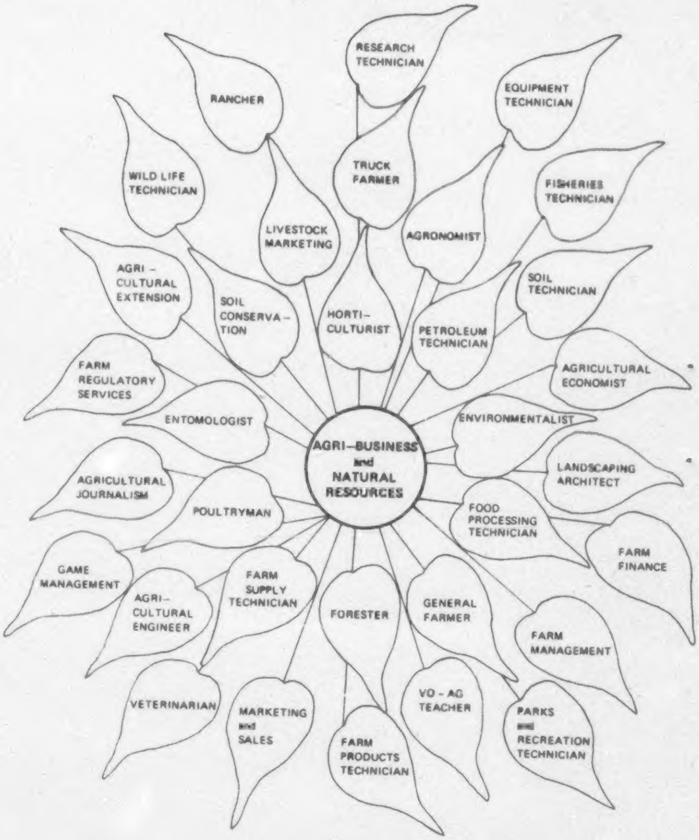

PHYSICS
ARCHITECT
DRAFTSMAN
CIVIL ENGINEER
NAVIGATOR
NUCLEAR ENGINEER
FORESTER
ARCHITEC-TURAL ENGINEER
OPTHALMO-LOGIST
OPTOMETRIST
PHARMACIST
GENETICIST
LITHO-GRAPHER
ATOMIC PHYSICIST
PHYSICAL CHEMIST
ELECTRONICS ENGINEER
VETERINARIAN
LAND DEVELOPMENT TECHNICIAN
GEOPHYSICIST
AERONAUTICAL ENGINEER
MINING ENGINEER
DENTIST
TEACHER
INSTRUMENTA-TION TECHNICIAN
OBSERVER
METER-OLOGIST
HYDRAULICS TECHNICIAN
STRUCTURAL ENGINEER
COMMUNICA-TIONS TECHNICIAN
EXCAVATION TECHNICIAN
POLLUTION RECYCLING TECHNICIAN
PREFABRICA-TION TECHNICIAN
LAND RECLAMATION TECHNICIAN

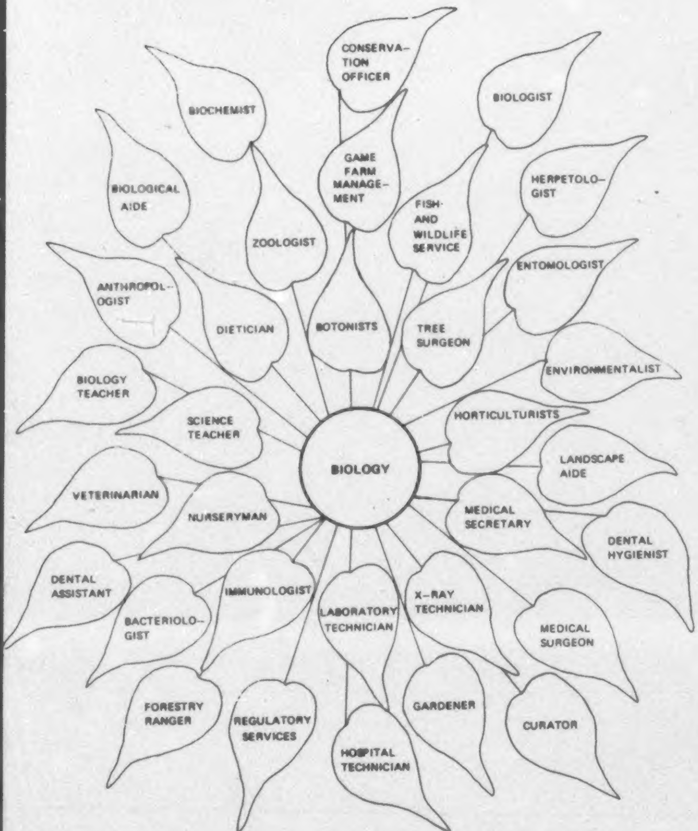

HEALTH AND PHYSICAL EDUCATION
VIROLOGIST
HEALTH ENGINEERS
OSTEOPATH
HEALTH EDUCATOR
HEALTH STATISTICIAN
OCCUPA-TIONAL THERAPIST
PHYSICAL THERAPIST
SPEECH AND HEARING TECHNICIAN
RECREATION LEADER
SOCIAL WORKER
TEACHER
SPORTS WRITER
CHIROPRAC-TOR
PROFESSIONAL ATHLETE
BUSINESS ADMINISTRATOR
PRACTICAL AND R.N. NURSE
CAMPGROUND SUPERVISOR
INSTITUTIONAL DIRECTOR
BACTERIOLO-GIST
HEALTH HYGIENIST
SANITARY AIDE
PARK MANAGEMENT
COMMUNITY RECREATION SUPERVISOR
SPECIAL NEEDS TECHNICIAN
ENVIRON-MENTALISTS
RESEARCH TECHNICIAN
HEALTH AIDE
ECOLOGICAL MONITOR
HEALTH INSPECTOR
COACH
MODEL
REFEREE
LIFEGUARD

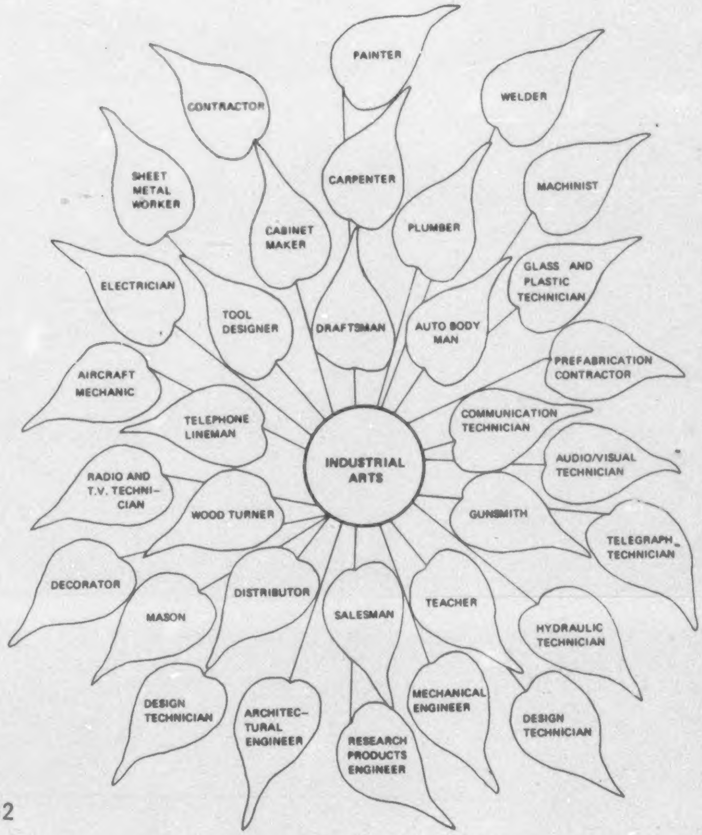

CONSUMER HOMEMAKING
NUTRITIONAL SPECIALIST
INTERIOR DECORATOR
CONSUMER TECHNICIAN
CLOTHES DESIGNER
PHYSICAL THERAPIST
OCCUPA-TIONAL THERAPIST
FLIGHT STEWARDESS
FOOD PROCESSING
PSYCHIATRIC TECHNICIAN
FOODS INSPECTOR
CONSUMER PLANNER
CHILD DEVELOP-MENT SERVICE
HOME ECONOMIST
HOME DEMONSTRA-TION AGENT
EXTENSION SERVICE
NUTRITIONIST
SOCIAL SERVICE WORKER
HOMEMAKER
REGISTERED NURSE
INSTITUTIONS MANAGEMENT
APPLIANCE SALESMAN
DIETICIAN
ADVERTISING
RESEARCH TECHNICIAN
FAMILY PLANNER
CHILD CARE SERVICE
PRACTICAL NURSE
BEAUTICIAN
FOOD SALESMAN
CLOTHING SALESMAN
COOK
WAITRESS
MILLINER


COMMUNICATION AND MEDIA
PHOTO ENGRAVER
FABRICATOR
ADVERTISOR
SIGN PRINTER
RESEARCHER
AUDIO-VISUAL TECHNICIAN
PLATE MAKER
SIGN DESIGNER
PUBLISHER
ANIMATOR
REPORTER
OPTICS TECHNICIAN
ILLUSTRATOR
COMMERCIAL ARTIST
JOURNALIST WRITER
PRODUCTION ARTIST
GRAPHIC ARTS PROCESSOR
GRAPHIC ARTS PHOTOGRAPHER
PRINTING PROCESSOR
ELECTRO-MECHANICIAL TECHNICIAN
PHOTOGRAPHER
LAYOUT ARTIST
LITHOGRAPHER
AUDIO SYSTEM RECORDER
EDITOR
BOOK-BINDER
DRAFTSMAN
TELEVISION TECHNICIAN
TELEVISION ANNOUNCER
TELEPHONE TECHNICIAN
TELEGRAPH TECHNICIAN
PROGRAMMING TECHNICIAN
SYSTEMS TECHNICIAN


SOCIAL STUDIES
SOCIAL WORKER
CLINICAL PSYCHOLOGIST
CLERGYMAN
SCRIPT WRITER
LAWYER
CORRESPONDENT
EDITOR
AUTHOR
POLITICIAN
HISTORIAN
TEACHER
COUNSELOR
ETHNOLOGIST
ARCHAEOLOGIST
PALEONTOLOGIST
ANTHROPOLOGIST
EDUCATION PSYCHOLOGIST
SOCIAL PSYCHOLOGIST
CARTOGRAPHER
INDUSTRIAL PSYCHOLOGIST
PUBLIC ADMINISTRATOR
STATISTICIAN
LABOR CONCILATOR
PUBLIC RELATIONS
GEOGRAPHER
LIBRARIAN
ECONOMIST
GENEALOGIST
PERSONNEL MANAGER
RADIO AND T.V. CORRESPONDENT
SOCIOLOGIST
ACTUARY
ARCHIVIST


AGRI-BUSINESS and NATURAL RESOURCES
RESEARCH TECHNICIAN
RANCHER
EQUIPMENT TECHNICIAN
TRUCK FARMER
WILD LIFE TECHNICIAN
FISHERIES TECHNICIAN
LIVESTOCK MARKETING
AGRONOMIST
AGRICULTURAL EXTENSION
SOIL TECHNICIAN
SOIL CONSERVATION
HORTICULTURIST
PETROLEUM TECHNICIAN
AGRICULTURAL ECONOMIST
FARM REGULATORY SERVICES
ENTOMOLOGIST
ENVIRONMENTALIST
LANDSCAPING ARCHITECT
AGRICULTURAL JOURNALISM
POULTRYMAN
FOOD PROCESSING TECHNICIAN
FARM FINANCE
GAME MANAGEMENT
AGRICULTURAL ENGINEER
FARM SUPPLY TECHNICIAN
FORESTER
GENERAL FARMER
FARM MANAGEMENT
VETERINARIAN
MARKETING and SALES
VO-AG TEACHER
PARKS and RECREATION TECHNICIAN
FARM PRODUCTS TECHNICIAN


BIOLOGY
CONSERVATION OFFICER
BIOCHEMIST
BIOLOGIST
GAME FARM MANAGEMENT
BIOLOGICAL AIDE
HERPETOLOGIST
FISH AND WILDLIFE SERVICE
ZOOLOGIST
ENTOMOLOGIST
ANTHROPOLOGIST
DIETICIAN
BOTONISTS
TREE SURGEON
ENVIRONMENTALIST
BIOLOGY TEACHER
SCIENCE TEACHER
HORTICULTURISTS
LANDSCAPE AIDE
VETERINARIAN
NURSERYMAN
MEDICAL SECRETARY
DENTAL HYGIENIST
DENTAL ASSISTANT
IMMUNOLOGIST
BACTERIOLOGIST
LABORATORY TECHNICIAN
X-RAY TECHNICIAN
MEDICAL SURGEON
FORESTRY RANGER
REGULATORY SERVICES
HOSPITAL TECHNICIAN
GARDENER
CURATOR


INDUSTRIAL ARTS
PAINTER
CONTRACTOR
WELDER
SHEET METAL WORKER
CARPENTER
MACHINIST
CABINET MAKER
PLUMBER
ELECTRICIAN
GLASS AND PLASTIC TECHNICIAN
TOOL DESIGNER
DRAFTSMAN
AUTO BODY MAN
PREFABRICATION CONTRACTOR
AIRCRAFT MECHANIC
TELEPHONE LINEMAN
COMMUNICATION TECHNICIAN
AUDIO/VISUAL TECHNICIAN
RADIO AND T.V. TECHNICIAN
WOOD TURNER
GUNSMITH
TELEGRAPH TECHNICIAN
DECORATOR
MASON
DISTRIBUTOR
SALESMAN
TEACHER
HYDRAULIC TECHNICIAN
DESIGN TECHNICIAN
ARCHITECTURAL ENGINEER
RESEARCH PRODUCTS ENGINEER
MECHANICAL ENGINEER
DESIGN TECHNICIAN

CAREER DEVELOPMENT CONCEPT
= EDUCATION CONTINUUM =

CONTENT ⟷ **PROCESS**

TEACH the
world of work
specific saleable
skills

USE the
world of work
to test and reflect
subject content

CAREER DEVELOPMENT CONCEPT PROGRAM

Core Elements

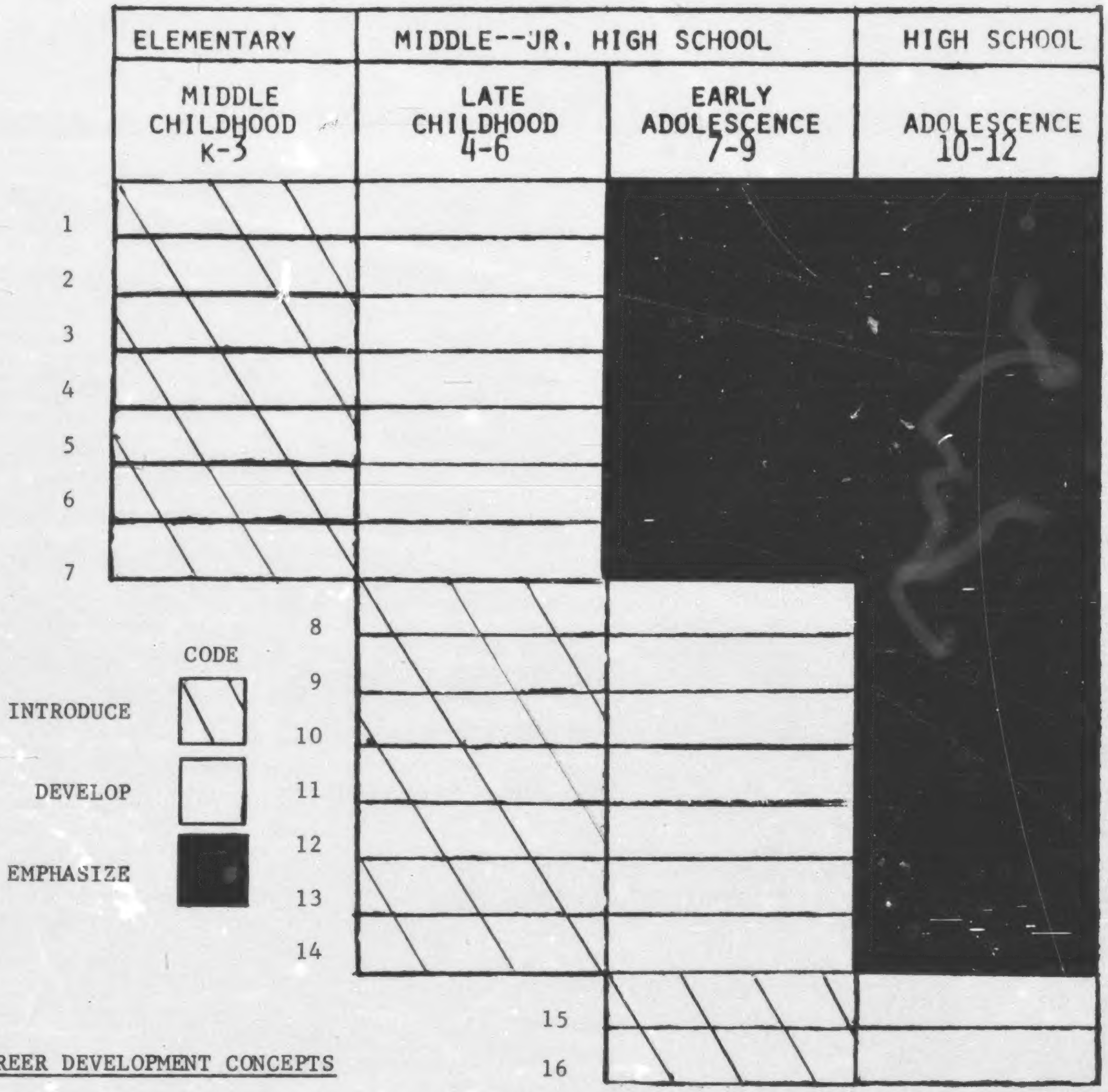
Units, projects, involvements, ideas, values, curriculum, etc., that use career development concept processes (demonstrative of self development) to teach the content of math, science, social studies, art, business, physical education, industrial arts, home economics, communications, language, music, humanities, cooperative education, drama, special education, reading, etc.

Possible Support Systems

Community resource program
Field trip arrangements
In-service education
Curriculum writing
Teacher exploration materials
Labs
Resource centers
Career days program
Counselors' exploration programs
Community Career Center
Liaison programs:
  Business
  Parents
  Community
  Government
Government agencies
Etc.

WISCONSIN CAREER DEVELOPMENT SCOPE AND SEQUENCE MODEL

(Planning Device Example)



	ELEMENTARY	MIDDLE--JR. HIGH SCHOOL		HIGH SCHOOL
	MIDDLE CHILDHOOD K-3	LATE CHILDHOOD 4-6	EARLY ADOLESCENCE 7-9	ADOLESCENCE 10-12
1	▨	☐	■	■
2	▨	☐	■	■
3	▨	☐	■	■
4	▨	☐	■	■
5	▨	☐	■	■
6	▨	☐	■	■
7	▨	☐	■	■
8		▨	☐	■
9		▨	☐	■
10		▨	☐	■
11		▨	☐	■
12		▨	☐	■
13		▨	☐	■
14		▨	☐	■
15			▨	☐
16			▨	☐

CODE

INTRODUCE ▨

DEVELOP ☐

EMPHASIZE ■

CAREER DEVELOPMENT CONCEPTS

1. An understanding and acceptance of self is important throughout life.
2. Persons need to be recognized as having dignity and worth.
3. Occupations exist for a purpose.
4. There is a wide variety of careers which may be classified in several ways.
5. Work means different things to different people.
6. Education and work are interrelated.
7. Individuals differ in their interests, abilities, attitudes and values.
8. Occupational supply and demand has an impact on career planning.
9. Job specialization creates interdependency.
10. Environment and individual potential interact to influence career development.
11. Occupations and life styles are interrelated.
12. Individuals can learn to perform adequately in a variety of occupations.
13. Career development requires a continuous and sequential series of choices.
14. Various groups and institutions influence the nature and structure of work.
15. Individuals are responsible for their career planning.
16. Job characteristics and individuals must be flexible in a changing society.

ASSESSMENT DEVICE FOR CAREER MATERIALS

1 2 3 4 5 6 7 8 9 10

	Subject Content Awareness ↔ Subject Content Understanding	Related Career Awareness ↔ Related Career Identity	Self Awareness ↔ Self Identity	Appreciations Attitudes ↔ Self-Social Fulfillment	Decision-making skills ↔ Career Decisions	Economic Awareness ↔ Economic Understanding	Skill Awareness ↔ Employment Skills	Educational Awareness ↔ Educational Identity
K-3								
4-6								
7-9								
10-12								
12 +								

1 2 3 4 5 6 7 8 9 10

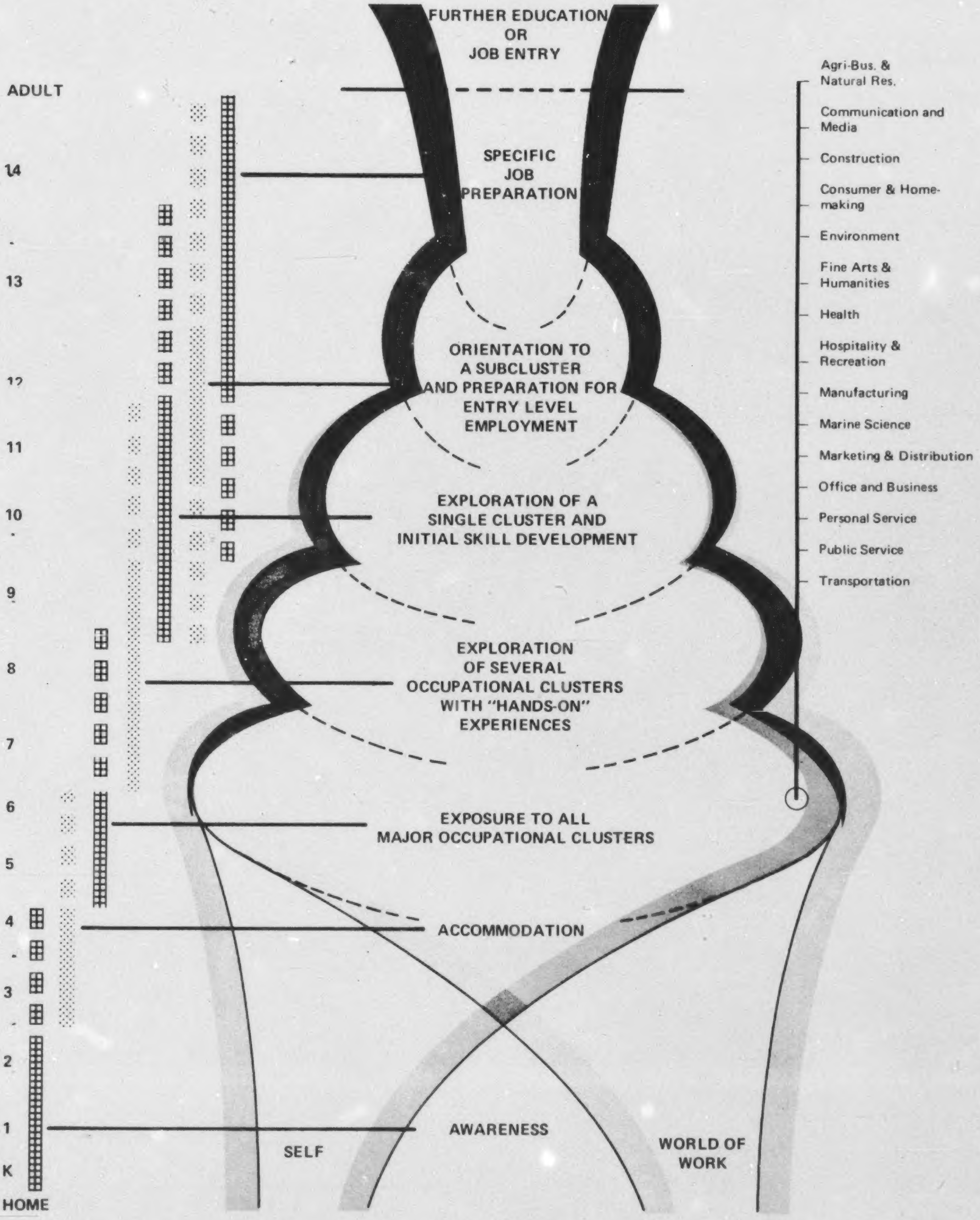
Helling -- District 281

Directions:

1. Assess the involvement (1-10) on each of the eight continuums.
2. Determine the dominate method of communication:
   A = Affective (feeling)
   P = Psychomotor (doing)
   C = Cognitive (thinking)
3. Select the appropriate grade level and put the number (1-10) and the appropriate letter or letters in each box.
4. While a total score would show little, a scan of the row will give an idea of the material's appropriateness for the goals considered.

(Planning Device Example)

IOWA MODEL FOR CAREER DEVELOPMENT


FURTHER EDUCATION
OR
JOB ENTRY
ADULT
14
13
12
11
10
9
8
7
6
5
4
3
2
1
K
HOME
SPECIFIC
JOB
PREPARATION
ORIENTATION TO
A SUBCLUSTER
AND PREPARATION FOR
ENTRY LEVEL
EMPLOYMENT
EXPLORATION OF A
SINGLE CLUSTER AND
INITIAL SKILL DEVELOPMENT
EXPLORATION
OF SEVERAL
OCCUPATIONAL CLUSTERS
WITH "HANDS-ON"
EXPERIENCES
EXPOSURE TO ALL
MAJOR OCCUPATIONAL CLUSTERS
ACCOMMODATION
AWARENESS
SELF
WORLD OF
WORK
Agri-Bus. &
Natural Res.
Communication and
Media
Construction
Consumer & Home-
making
Environment
Fine Arts &
Humanities
Health
Hospitality &
Recreation
Manufacturing
Marine Science
Marketing & Distribution
Office and Business
Personal Service
Public Service
Transportation

IOWA MODEL FOR CAREER DEVELOPMENT

AWARENESS: Activities which develop concepts of self and positive attitudes toward the world of work are the basis of later career decisions. Learning activities which develop these concepts are appropriate for use in the total curriculum during the first three years of school. For some students this phase will continue through the fourth grade. During the latter period of this phase the student will begin to recognize relationships between individuals and the various industries and occupations.

ACCOMMODATION: During the third and fourth grades the student is at a point in this development where he begins to internalize the concept of his future role in the world of work. In some situations this development might continue through the sixth grade. The integration of career education activities into the total curriculum will enable the student to develop a concept of the relationship between work and various life styles. Through appropriate learning activities the student can begin to appreciate the personal traits which contribute to the development of satisfactory working relationships. Throughout this phase, the emphasis is on the development of healthy attitudes toward all types of work.

EXPOSURE TO ALL MAJOR OCCUPATIONAL CLUSTERS: The integration of career information into the elementary school curriculum will permit the student to become acquainted with the types of jobs associated with each of the occupational clusters. Thus a base will be provided which will assist the student in his future selection of occupational clusters for exploration. This initial exploration of jobs and clusters will be directed more towards the occupational characteristics and less towards the hands on type of exploration. The development of favorable attitudes toward the value of work will continue to be emphasized during this phase of career development. This period in the career development process will normally take place during the fifth and sixth grades, but in certain situations it may continue on through junior high school.

EXPLORATION OF SEVERAL OCCUPATIONAL CLUSTERS WITH "HANDS-ON" EXPERIENCES: Some "hands-on" experiences are of value to the student throughout the elementary grades. The exploratory activities presented in this phase, however, usually will be provided during the seventh, eighth, and ninth grades, but for some students it may be as late as the eleventh grade. It would appear that this broad exploratory effort would be of the most benefit to the student in junior high school. This phase of career development will involve much more extensive "hands-on" work than was used during the elementary years. It is expected that six or more clusters will be selected by the student as he progresses through the junior high grades. A period of six to nine weeks may be spent by the student in exploring each of the clusters which he has selected. It is necessary to provide "hands-on" experience which is broadly representative of the types of jobs available in the cluster.

EXPLORATION OF A SINGLE CLUSTER AND INITIAL SKILL DEVELOPMENT: The exploration of a single occupational cluster will be most appropriate for the student somewhere between the ninth and eleventh grades although in some cases the freshman in college may still be exploring a total cluster. Although this step might be bypassed by some students who progress directly from the "Exploration of Several Occupational Clusters" directly into either "Orientation to a Subcluster and Preparation for Entry Level Employment" or "Specific Job Preparation", it is needed to provide each student ample opportunity to find an occupation in which he has both aptitude and interest. In this period of career development the student will delve into a particular cluster to greater depths with the purpose of selecting the area of that cluster which best fits his individual characteristics.

ORIENTATION TO A SUBCLUSTER AND PREPARATION FOR ENTRY LEVEL EMPLOYMENT: The exploration of and preparation for an occupational subcluster will normally be provided for the students during the eleventh and twelfth grades, although a student may be ready to enter this type of program as early as the ninth grade or as late as the sophomore year of college. The exploration of and preparation for a group of closely related jobs will include an indepth study of these jobs and the development of common competencies needed for performance in these jobs, including the attitudes and personal characteristics which will assist the student in obtaining and holding a job. This phase may be bypassed by the student if he is ready to select a specific occupation and enter into training for that particular job.

SPECIFIC JOB PREPARATION: This period of the career development process is the time when the student will be assisted in obtaining proficiency in the specific skills and knowledge which are necessary for entry into and success within a specific occupation. The activities of this period not only will include student acquisition of skills, but also will be directed toward refining his human relations characteristics which will result in harmonius working relationships with superiors and associate alike. Although this phase may be expected to start at the twelfth grade or beyond, it may occur as early as the tenth grade for some students.

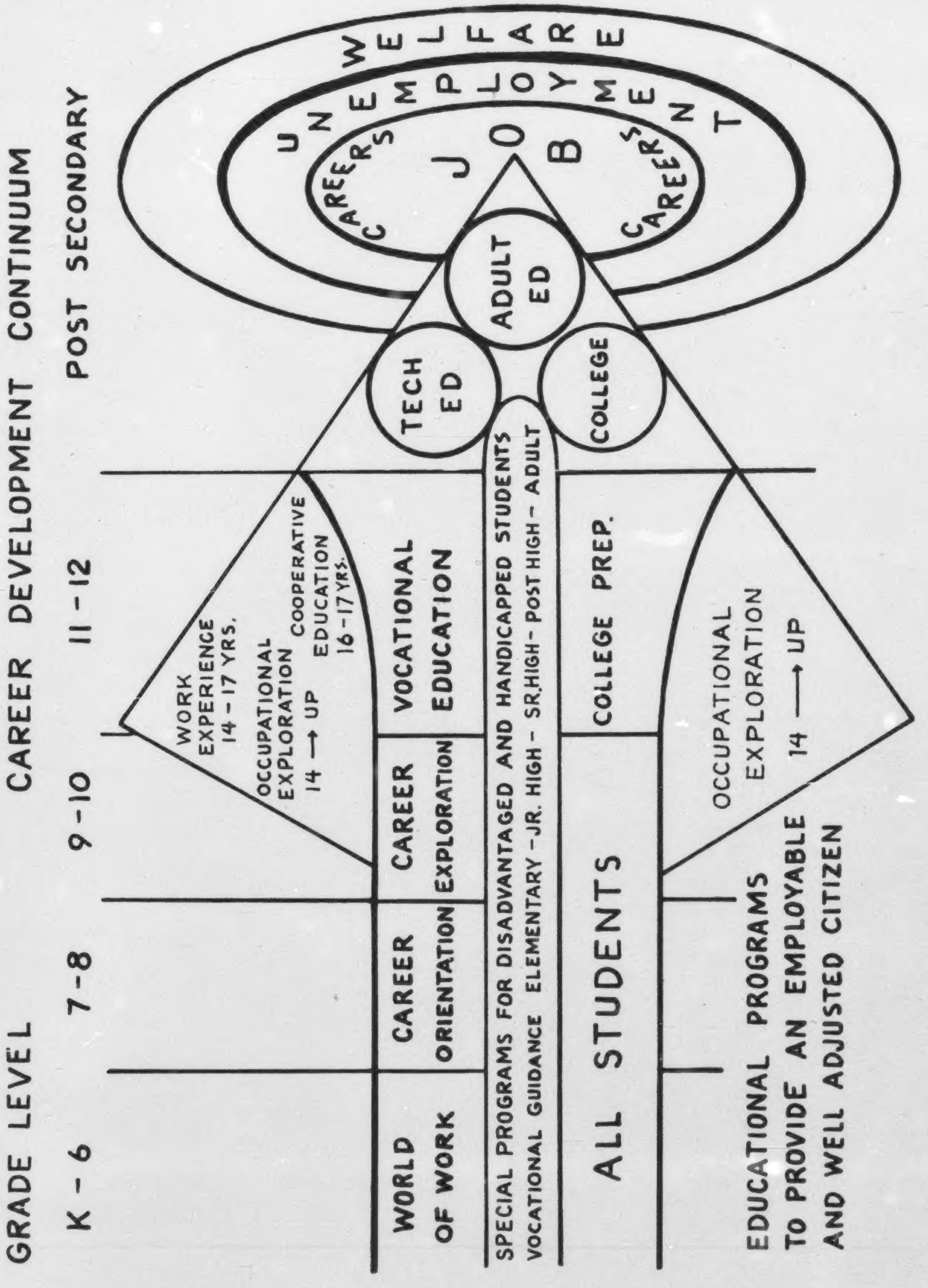
PLANNING DEVICE EXAMPLE

BASIC CAREER EDUCATION ELEMENTS

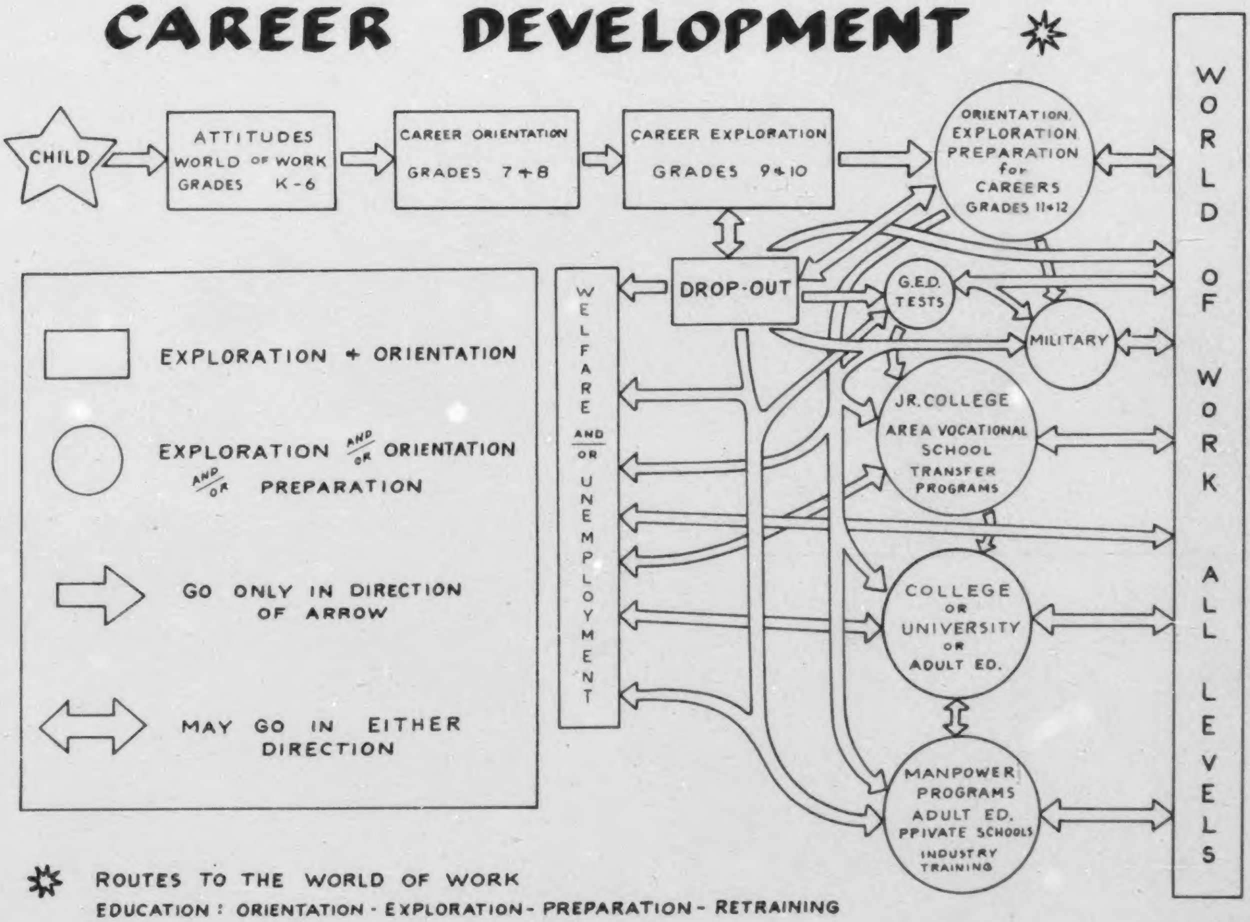
CAREER EDUCATION ELEMENTS	ELEMENT OUTCOMES
Career Awareness	Career Identity
Knowledge of the total spectrum of careers	Role or roles within the world of work
Self-Awareness	Self-Identity
Knowledge of the components that make up self	Know himself -- consistent value system
Appreciations, Attitudes	Self-Social Fulfillment
Life roles -- feeling toward self and others in respect to society and economics	Active work role Satisfying work role
Decision-making skills	Career Decisions
Applying information to rational processes to reach decisions	Career direction, has a plan for career development
Economic Awareness	Economic Understanding
Perception of processes in production, distribution, and consumption	Solve personal and social problems in an economic environment
Skill Awareness and Beginning Competence	Employment Skills
Skills -- ways in which man extends his behavior	Competence in performance of job-related tasks
Employability Skills	Career Placement
Social and communication skills appropriate to career placement	Employed in line with career development plan
Educational Awareness	Educational Identity
Perception of relationship between education and life roles	Ability to select educational avenues to develop career plans

Rodney Hale
South Washington County Schools
St. Paul, Minnesota

(Planning Device Example)


CAREER DEVELOPMENT CONTINUUM
GRADE LEVEL
K - 6
7 - 8
9 - 10
11 - 12
POST SECONDARY
WORLD OF WORK
CAREER ORIENTATION
CAREER EXPLORATION
VOCATIONAL EDUCATION
WORK EXPERIENCE 14 - 17 YRS.
OCCUPATIONAL EXPLORATION 14 → UP
COOPERATIVE EDUCATION 16 - 17 YRS.
SPECIAL PROGRAMS FOR DISADVANTAGED AND HANDICAPPED STUDENTS
VOCATIONAL GUIDANCE ELEMENTARY - JR. HIGH - SR. HIGH - POST HIGH - ADULT
ALL STUDENTS
COLLEGE PREP.
OCCUPATIONAL EXPLORATION 14 ⟶ UP
TECH ED
ADULT ED
COLLEGE
JOB
CAREERS
CAREERS
UNEMPLOYMENT
WELFARE
EDUCATIONAL PROGRAMS TO PROVIDE AN EMPLOYABLE AND WELL ADJUSTED CITIZEN

CAREER DEVELOPMENT ✵


CHILD
ATTITUDES WORLD OF WORK GRADES K-6
CAREER ORIENTATION GRADES 7 + 8
CAREER EXPLORATION GRADES 9 + 10
ORIENTATION, EXPLORATION, PREPARATION for CAREERS GRADES 11 + 12
WORLD OF WORK ALL LEVELS
DROP-OUT
G.E.D. TESTS
MILITARY
WELFARE AND/OR UNEMPLOYMENT
JR. COLLEGE AREA VOCATIONAL SCHOOL TRANSFER PROGRAMS
COLLEGE OR UNIVERSITY OR ADULT ED.
MANPOWER PROGRAMS ADULT ED. PPIVATE SCHOOLS INDUSTRY TRAINING
EXPLORATION + ORIENTATION
EXPLORATION AND/OR ORIENTATION AND/OR PREPARATION
GO ONLY IN DIRECTION OF ARROW
MAY GO IN EITHER DIRECTION

✵ ROUTES TO THE WORLD OF WORK
EDUCATION: ORIENTATION - EXPLORATION - PREPARATION - RETRAINING

EVALUATORY CRITERIA FOR CAREER DEVELOPMENT PROGRAMS

1. PROGRAM IS DESIGNED FOR ALL STUDENTS (K-12).

2. CAREER DEVELOPMENT IS INTEGRATED THROUGHOUT THE CURRICULUM.

3. EXPOSES ALL STUDENTS TO THE FULL SPECTRUM OF THE WORLD OF WORK.

4. PROVIDES DIRECTED OCCUPATIONAL EXPERIENCES AND EXPLORATION IN THE REAL WORLD OF WORK, ALONG WITH SIMULATED AND INFORMATIONAL EXPERIENCES TO PERMIT FOCUS ON CAREER CLUSTERS.

5. COORDINATION PROVIDED WITHIN THE SCHOOL SYSTEMS AND TEACHING STAFF.

6. PROVIDES IN-SERVICE TRAINING PROGRAMS WHICH WILL ORIENT TEACHERS TO THE WORLD OF WORK.

PHASE III

CAREER DEVELOPMENT BEHAVIORAL OBJECTIVES

The following objectives are built upon the seven "dimensions" of career education listed in Phase II. The "Yellow Book" (Suggested Teaching/Learning Approaches for Career Development in the Curriculum) matches these objectives and gives the educator enabling objectives, rationale, and suggested activities that may serve as a springboard to integration of career development into their area so as to make them more effective teachers. This phase involves the teacher utilizing career development concept as a vehicle to teach his subject.

WRITING A UNIT IN CAREER EDUCATION*

1. What activities outside the classroom are many of your kids interested in? You may want to ask the kids. List all the activities and interests that seem to have a general attraction for your kids.

2. Select one activity or interest and decide which careers, industries, businesses, jobs, services, occupations, crafts, and trades are directly related.

3. Look at the career clusters. Under which cluster would these careers fit? Can you name some additional related careers in that cluster?

4. After you have become acquainted with the career education concepts, think about the interest and experience level of your students and select at least one concept which you consider appropriate to focus on in your unit. It will be necessary for you to decide at this point how you will tie the unit into your own content.

5. Who can best be a resource for this activity or career possessing first-hand experience?

6. Where is the best place for students to obtain some experience with this activity?

7. How can the teacher provide some useful experiences with this activity?

8. What indicators of student involvement will satisfy your standards for successful student participation?

9. How might you vary the communication so that affective, psycho-motor, and cognitive involvements are arranged for?

10. What format will be best so you can use it yourself and also share it with colleagues?

Now: Look at the concepts on the next page, consider your objectives, look over the activities, and put together a feeling, doing, thinking unit that involves humans and teaches content. Good luck!

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*Don Johansen assembled these materials in the course of his work as Director of the Career Education Environmental Program.

CAREER EDUCATION CONCEPTS

- Awareness of Self Through Work
    - Attitude toward work
    - Attitude toward workers
    - Appreciation for work

- Career Orientation
    - Information about careers
    - Clusters -- relations through things, ideas, people
    - Acquisition of basic skills needed for work
    - Interrelatedness and interdependencies of work

- Job Exploration
    - Observation
    - Worker interviews
    - Work experience
    - Educational avenues

- Career Import
    - Work value for self
        - Psychological
        - Economical
    - Work value for society
        - Sociological
        - Economical

- Career Preparation
    - Acquisition of specific skills needed for work

- Decision-making
    - Personal valuing related to current available information, attitudes, and abilities

OCCUPATIONAL CLUSTERS SUGGESTED BY U.S.O.E.

- Agri-business and Natural Resources
- Business and Office
- Health
- Public Service
- Environment
- Communication and Media
- Hospitality and Recreation
- Manufacturing
- Marketing and Distribution
- Marine Science
- Personal Services
- Construction
- Transportation
- Consumer and Homemaking Education
- Fine Arts and Humanities

SOME CAREER EDUCATION ACTIVITIES WITH EXAMPLES

1. Field trip	Veterinarian at an animal clinic
2. Resource people in classroom	Auto mechanic
3. Work observation	Attend a play or professional sports event, individually or as a class. Arrange ahead of time to talk to the participants, both those on view and those behind the scenes.
4. Work experience	Help a parent at home or at place of work, assist the school librarian, serve as a candy striper at a local hospital, have a paper route, sell magazine subscriptions, raise a garden.
5. Audio-visual aid	Borrow films, filmstrips, slides, tapes, and records through the public library. (See bioliography that accompanies this guide for further audio-visual sources.)
6. Role-playing	Present a skit depicting community with a storm causing power failure, and the jobs which are affected as a result.
7. Career games	Play class-generated games; i.e., "What's My Line?"; or charades acting out careers; or pinning a job title on each student's back and having each one find out "who he is" by asking each other questions; or a take-off on the "Dating Game" with one student questioning three others about careers they represent but cannot directly divulge, and then choosing which career description is personally most appealing.
8. Presentation	Students may pursue special interests by reading career resource books and/or interviewing people, and then reporting to class.
9. Projects in class	Younger pupils may bring "Daddy Bags" containing tools of father's careers. Older pupils may conduct neighborhood surveys concerning what people do or where they work.

10. Interclass projects	Pupils in one grade may help or work with pupils in another grade. Junior high students could run a day-care center one morning a week or interview senior high students about their career choices.
11. Simulated work	Divide the class into two companies that do business with each other. They can do correspondence, telephone communication, and direct sales, while bringing in a variety of careers, such as payroll clerk, secretary, public relations, office manager, mail clerk, salesman, and maintenance.
12. Counseling and guidance	Use activities to discover one's likes and dislikes and discussions based on why we hold different attitudes.
13. Information center	Provide resource materials including books, pamphlets, guides, magazines, news clippings, and bulletin boards with information about careers.

Now move on to the objectives listed in the seven dimensions of career development. Select some that seem reasonable to you. Check the yellow resource book, and begin to lay out your project.

UNIVERSITY OF MINNESOTA
College of Education

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Distributive Education

(1968 Summer Project, Distributive Education and Counselor Education)

BEHAVIORAL OBJECTIVES FOR CAREER DEVELOPMENT

Behavioral objectives have been classified under seven broad instructional goals. In writing the objectives, an attempt was made to satisfy two out of a possible four criteria. Thus, the objectives should:

1. Describe what the learner will be doing - i.e., the action required.
2. Describe the important conditions under which the learner must demonstrate his competence.
3. Specify the limits, scope or range of the problem situation.
4. State the standards of performance expected of the student.

Enabling objectives will have to be written in order to translate a number of the behavioral objectives into immediate learning goals. The behavioral and enabling objectives are to be employed in developing meaningful and imaginative learning experiences.

I. EVALUATES HIS INTERESTS, ABILITIES, VALUES, NEEDS AND OTHER SELF CHARACTERISTIC AS THEY RELATE TO OCCUPATIONAL ROLES.

1. Evaluates the relevance of his aptitudes and abilities for broad occupational areas.
2. Evaluates own abilities and characteristics with respect to responsibilities and tasks of preferred occupation.
3. Identifies and considers alternative occupations for which training, experience, and interest requirements are sufficiently similar to those of the preferred occupation that they may serve as alternate career possibilities.
4. Describes how several occupations would provide a means of expressing his personality, satisfying his psychological needs, utilizing his talents and satisfying his basic needs of livlihood.
5. Describes how significant persons in his life differ widely in their make-ups and their endowments of traits, abilities, attitudes and aspirations and expresses an appreciation of the value of these differences.
6. Examines and elaborates his own values as related to occupations, work situations and personal work behavior.
7. Examines preferred occupations in terms of his current life context, considering such factors as personal and parental aspiration, family background, personal values, etc.
8. Evaluates the relevance of his interests for broad occupational areas.
9. Evaluates the relevance of his psychological needs for broad occupational areas (e.g., controlling, organizing, helping, communicating, persuading, relating, etc.)
10. Identifies the personal compromises he may have to make in order to attain his chosen occupational goal.
11. Verifies how management of resources may affect individual standards of living at home, at work and in the community.
12. Verifies how management of resources may be influenced by values and experiences.
13. Uses stimuli provided by the occupational world to analyze self and the kind of person he wishes to become.

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II. EXPLORES BROAD OCCUPATIONAL AREAS IN TERMS OF OPPORTUNITIES, POTENTIAL SATISFACTIONS, REQUIRED ROLES OF WORKERS AND OTHER RELATED DIMENSIONS.

1. Obtains occupational experience as an essential part of his orientation to and introduction into the work culture.
2. Increases the range of occupations and their functions and requirements of which he has knowledge.
3. Identifies the multiplicity of kinds of interest satisfied by a few jobs in each broad occupational area (e.g., like to work with people, like to work alone, like to work outdoors, like to work with data and information
4. Identifies the kind and scope of capabilities required by a few jobs in one occupational area of his choice (.e.g, focusing a microscope, scaling a drawing, deciding upon the proper statistical routine, developing an approved approach to customer services.
5. Describes occupational hierarchies associated with the preferred occupation and requirements for moving to a higher position.
6. Elicits information about what persons with experience and training in the preferred or selected occupations are receiving as compensation (fringe benefits, salary, etc.)
7. Identifies the occupational areas which provide him with ego-involvement kinds of activity.
8. Verifies how varying needs for personal independence may be met by different occupations and work settings.
9. Assesses potential satisfactions and dissatisfactions associated with preferred occupation (e.g., a sense of accomplishment or no sense of accomplishment, recognition from subordinates or peers or unhappy co-worker relationships, high or low income, taking responsibility, routine or repetitive tasks, social status in the community, undesirable working conditions and working hours, and opportunity to develop unique solutions to problems).
10. Assesses the psychological and economic costs of performing a given occupational role.
11. Examines life styles and way of living associated with a few occupations in the broad occupational areas or areas of his choice.
12. Analyzes social roles and social demands required for successful performance in preferred occupations.
13. Gathers evidence of the effect of general level of employment or growth in the economy on job opportunities.
14. Assesses the extent to which technological change may affect the employment opportunities and task requirements of a preferred occupation.
15. Identifies social and economic growth trends and their potential effects on broad occupational fields and preferred occupations.
16. Interprets statistical data and draws conclusions about occupational and industrial employment trends, their expansion or decline.
17. Identifies the various job ladder or career progression possibilities of a few jobs in each broad occupational area.
18. Determines whether preferred occupations require high levels of geographic mobility.
19. Lists factors which may influence job stability, advancement or failure in his preferred occupation.
20. Compares immediate rewards with long term rewards in several occupations
21. Weighs the economic rewards against the psychological rewards in considering preferred occupations.

III. EXPLORES THE PSYCHOLOGICAL MEANING OF WORK AND ITS VALUE IN THE HUMAN EXPERIENCE

1. Assesses the contribution of a wide range of various occupations to society.

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2. Analyzes the value which society places upon personal endeavor and achievement in light of his own values.
3. Begins to formulate a concept of his place, obligation, and destiny in society.
4. Cites examples of how society is benefited by the willingness of individuals to utilize their abilities in vocational tasks.
5. Affirms and demonstrates the conditions that are essential for a balanced and productive life and the part that vocation may play in the overall scheme.
6. Views work as a principal instrument for coping with and changing man's environment.
7. Distinguishes between work as acceptance of employment with the primary objective of securing the income it provides and career which carries with it a whole series of expectations.
8. Appraises the social worth of work performed at different socio-economic levels.
9. Values work not alone for what it affords in consumption of goods and services, but for the intrinsic meaning it makes possible for him.
10. Contrasts the meaning of work in an economy of abundance as opposed to an economy of scarcity.
11. Identifies the changing meanings of work.
12. Summarizes the ways in which his preferred work contributes to the welfare of mankind.
13. Obtains information about the way which his preferred occupation might affect his community and family life, his residential or geographic mobility, his type and amount of leisure-time activities.
14. Discusses the extent to which he is free to move among the three possible choices: work, play, creative leisure.
15. Employs his leisure time in ways that are meaningful to him.
16. Considers the work contribution of woman to be as socially significant as that of man.
17. Acknowledges that many women will need the stimulation and rewards of a work role in addition to a family role.

IV. UNDERSTANDS MODERN WORK ORGANIZATION AND ITS AGGLOMERATE MILIEU.

1. Investigates and discusses the way in which management, labor, government and public dynamics interact to influence work life.
2. Demonstrates familiarity with those factors which stimulate or retard vocational opportunities (e.g., the role of taxation, emphasis on production of consumer goods as opposed to capital goods, lending policies, etc.).
3. Examines typical organizational charts to determine how business structures the authority of specialists and their relationships with each other.
4. Debates the benefits of patterned behavior in a social institution as against the advantages of individual initiative.
5. Assesses the effect of the power structure on the role of a worker in a work situation.
6. Examines and discusses the effect upon the power structure within a work establishment of different kinds and degrees of authority he or others may bring to the situation (e.g., economic control, administrative power, educational development, proficiency of skill, and interpersonal abilities).
7. Cites examples of social and economic laws, regulations, and/or customs which legislate the individual's activities in the work situation.
8. Explains the interdependency of all workers and work talents in contributing to the general economic welfare.

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9. Disavows the traditional division of labor by sex by citing developments which have reduced its importance (e.g., increasing mechanization of routine and physically heavy work, general development of household equipment, planned parenthood, child care facilities, etc.).

V. POSSESSES AN AWARENESS THAT THE INDIVIDUAL'S ROLE IN WORK IS TIED TO THE WELL-BEING OF THE COMMUNITY.

1. Demonstrates in his vocational planning an interest in contributing to society in ways that go beyond that which is necessary for him to carry his own weight in the social structure.
2. Debates the appropriateness for our time of the ethic of fair exchange versus an ethic of cooperative giving without any promise of return.
3. Examines the issue of how work in America can help to overcome the poverty in which the majority of mankind is steeped.
4. Identifies with a wide range of communities and attaches to the simultaneous memberships varying degrees of weight in accordance with his own tests.
5. Analyzes the extent to which individual welfare is dependent upon the well being of all people in the society.
6. Investigates and describes how an individual's social roles in the community are influenced by the work he does and how well he does it.
7. Gives examples and analyzes the courses of unethical and illegal practices in the business community (e.g., anti-trust violations, collusive bidding on government contracts, private deals with suppliers in a flagrant conflict of interest, etc.).
8. Analyzes the extent to which business operates on the principles of individual self interest or social responsibility.
9. Analyzes the extent to which unions operate on the principle of individual self interest or social responsibility.
10. Appraises the occupational role for its potential as a source for humane expressions of self.

VI. EXHIBITS PLANFULNESS IN STRIVING TO ACHIEVE OCCUPATIONAL GOALS AND OBJECTIVE

1. Verbalizes about and plans his current school experience so that it fits into the pursuit of his occupational goals.
2. Selects a job which holds potential for contributing to his long-range vocational development.
3. Validates the accuracy of occupational information he has received.
4. Seeks information about what skills are needed to get a preferred job.
5. Seeks information about how to get ahead on a job.
6. Identifies major obstacles or impediments which may affect educational or vocational progress (e.g., personal (ability, aptitude), situational, (illness, finances), or social (race, religion)).
7. Anticipates and prepares for change in career by identifying skills or knowledge utilized in the preferred occupation which may transfer to another.
8. Projects a career plan which reflects an understanding of the principle that the satisfaction an individual obtains from his life work is related to the degree to which it enables him to implement his abilities, interests, values and other self-characteristics.
9. Demonstrates a commitment to the idea that he should have a plan for educational vocational life by actually taking steps to formulate such a plan based upon sound information and a selective use of resources.
10. Identifies factors which may have most relevance for his career decisions (e.g., work preparation and experience, employment trends, easy job, family pull, etc.)
11. Projects himself into future life-style associated with preferred occupation.

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12. Critically evaluates the career advice given by significant others.
13. Describes his preferred occupation in terms consistent with occupational literature and real contacts with workers, rather than a stereotyped conception.
14. Delineates the basis upon which the employer decides whom he will hire when he has a great many applicants for the job.
15. Makes explicit whether he seeks a work environment which allows for autonomy and individual achievement, or one in which his rewards will be physical.
16. Identifies and utilizes available resources for obtaining information about occupational characteristics, requirements or employment data.
17. Communicates effectively to others about his vocational abilities, interests, and plans, orally or in writing.
18. Makes career plans which take into account the fact that technology and automation influence change and may create the need for transferable skills.
19. Knows and uses sources which provide information concerning the content and prerequisites of various educational and training courses.
20. Assesses own abilities and financial resources available to the educational requirements for preferred occupations.
21. Identifies sources of financial aid for further education or training and the requirements or restrictions of specific assistance.
22. Evaluates the quality of education, job training, or work experience in preparing for a preferred occupation.
23. Accepts responsibility for making occupational choices and moving toward goals.
24. Formulates an educational and/or training plan to prepare himself for a given occupational field or preferred vocation.
25. Accepts that life in the future will become a matter of continuing educational preparation for work.
26. Predicts his chances of reaching the level to which he aspires in the occupational area of his choice and can give good reasons for this self-evaluation.
27. Examines the vocational expectations significant others have for him and how these expectations affect his career plans (e.g., parents, friends, teachers, employer, peer groups).

VII. THROUGH HIS WORK-RELEVANT BEHAVIOR SHOWS THAT HE IS ACQUIRING A CONCEPT OF SELF AS A PRODUCTIVE PERSON IN A WORK-CENTERED SOCIETY.

1. Demonstrates the ability to identify information that should be included in a resume and/or application form.
2. Demonstrates through his own dress and manner the importance of personal appearance with respect to employability.
3. Assumes appropriate behavior for an employment interview.
4. Actively seeks information about rules, policies, and expectations associated with a given work task or work environment.
5. Considers appropriate factors in selecting employers (e.g., advancement, company policies, salary increases, and opportunities for growth).
6. Selects potential employers and locates suitable job vacancies.
7. Assesses individual attitudes toward self and how these affect or influence performance in the work situation.
8. Participates in individual and group experience which contribute to personal development (e.g., discussion, reading, observation).
9. Shows a genuine concern for and responsibility toward colleague workers
10. Demonstrates perceptual sensitivity to the needs of co-workers and employers.
11. Analyzes how his needs and values are expressed through personal behavior and ethical standards of conduct in the work situation.

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12. Discovers and verifies several ethical questions that confront workers in his preferred occupational field.
13. Describes how individual physical and mental health are related and how they may affect the work situation or be affected by it.
14. Expresses vocational maturity through a personal involvement in the work task and situation, responding positively to problems and showing a degree of importance.
15. Demonstrates an ability to reconcile varying expectations regarding role performance in a given work situation.
16. Contributes positively to group effort and group goals in a work situation by comprising at times and exercising influence on group goals.
17. Demonstrates an awareness of the dynamics of group behavior in a task-oriented situation.
18. Demonstrates the ability to depend on others and to be depended upon in the work environment.
19. Handles own position of authority in work environment in ways which lead to effective realization of personal goals and development of others.
20. Copes with authority in the work environment in ways which lead to effect realization of personal goals and development.
21. Analyzes objectively the motivations of significant others in the work environment who hold varying expectations regarding the worker's performance.
22. Elicits and considers suggestions and evaluations regarding a given work performance.
23. Evaluates the importance of work, leisure and home roles in determining what expenditures of personal effort and resources are to be given to a task or goal.
24. Manages leisure time, work time, and home time effectively to achieve individual goals.
25. Relates his own pattern of response with respect to prescribed versus discretionary requirements of a work task.
26. Demonstrates ability to handle and use success or failure constructively.
27. Performs in a given work situation in a manner to indicate he understands that success or failure depends not alone on technical proficiency but on quality of interpersonal relations as well.
28. Demonstrates effective work habits by checking the quality of his product or effort.
29. Demonstrates effective work habits by breaking work tasks into logical units.
30. Demonstrates effective work habits by utilizing communication skills when giving or evaluating instructions.
31. Demonstrates effective work habits by planning and scheduling work.
32. Identifies those items which should be included in a work report.
33. Perceives himself to be successful in copying with new social and work roles.

PHASE IV

ELEMENTS OF POSSIBLE PROGRAMS

The following items are offered as areas of discussion for the mixed groups when they are developing their "program" of career development. It is not complete nor is it meant to be as no one has yet defined what a program "should consist of." In my estimation, it never will be defined as a model for it changes with the times, the needs, the abilities of those in charge, and the institution that is developing it.

Note: For a quick reference to several questions that relate to this section, see "Phase II, Career Development Concept -- Change Agent."

ORGANIZATIONAL DEVELOPMENT (INTERVENTION)

IMPLEMENTING CHANGE PROGRAMS AS AN "INTERNAL CONSULTANT"*

General Principle

1. First goal is to establish trust in you as a competent, trustworthy professional (as opposed to creating a big splash in the system - or even making big changes).
2. Be open, straight, available, responsible and competent.

Rules or Criteria for Selecting Initial Interventions

1. Do *not* start where change is *most needed*. (resistance,etc.) or fractionate the large problem and do small parts and don't connect actions into a movement until later.
2. Do *not* start with a "*reverberating*" change (too threatening to too many).
3. *Do* pick a change with high probability of success.
4. *Do* pick a change with *moderately* high visibility.
5. *Do* start where you can build a support system (or power base) by selecting people who:
    - a. are *straight* in their communication, want challenge-have established integrity.
    - b. are innovative - open to change - are action oriented
    - *c. are not too dependent upon the system - are philosophy and goal oriented.
    - d. have moderately high status within the system.
    - e. can establish an open, trusting relationship.

Steps in Initiating Interventions in a System

1. Identify potential needs and possible changes within sub-systems.
2. Formulate one or two specific, explicit behavioral objectives.
3. Identify informal power structures, etc.
4. Plan your intervention - have several specific alternatives available.
5. Negotiate nature of change to be made - be explicit about outcomes, strategies, role of each participant.
6. Establish successive approximations - determine size of increments
7. Evaluate both constantly and periodically (put a meter on it).

* Alan Anderson - Professor of Educational Psychology University of Minnesota

THE PREMISE:

With the increasing emphasis on college and college preparatory programs by the lay public, educators, and mass communications media, there is a great danger the non-college bound student and his needs, particularly in occupational orientation, may be neglected. The problem of such students is further aggravated by the limitations of academic teachers in terms of occupational knowledge, complexity of the labor market, job entrance requirements, and the difficulty of personally getting first hand information essential to making career decisions.

Basic Elements in Planning the Implementation of a Career Development Program:

1. Survey school, business, industry, and community in terms of students' needs, learning resources, facilities, and leadership. (To provide justification for program)

2. Obtain endorsement of program from faculty, administration, and school board.

3. Organize and use a local advisory committee, composed of students, school faculty and administration, business and industry representatives, parents, local and state governing agencies, and area vocational-technical school personnel wherever available.

Rationale and Suggested Comprehensive Career Information Development Plan (Grades K-9)

It is clearly recognized that the characteristics of schools in this State are dependent upon many variables. These variables include size, geographic location, community resources, local leadership, the needs of students, availability of facilities, and many other factors.

A given administrative unit, due to these variables, may find implementation of the total plan impossible. The implementation of any combination of the parts composing the plan, however, could be valuable in moving toward a long-range plan of occupational exploration.

1. All Teachers Should Be Involved in Relating Their Subject Content More Directly to Occupations:

   Teachers should be strongly encouraged to correlate occupational information and opportunities with each subject as it is being taught. They should make a concerted effort to integrate this information into regular classroom work by providing appropriate laboratory experiences, classroom demonstration, and perhaps, by inviting community resource persons into the school for illustrated lectures concerning particular occupations. Students at each grade level could be provided opportunities in each subject area to explore and understand the value and dignity of all types of work and to develop an awareness of the skills, knowledge, and attitudes that are necessary for success. Some teachers are already doing a good job in this respect, but many teachers are unsuccessful in their efforts to effectively relate occupational exploration to subject content.

In order to become more effective, these teachers will need to become more familiar with job opportunities. They will need guideline materials to be used with textbooks and existing syllabi, and numerous teaching aids and equipment.

2. Manipulative Exploratory Non-reimbursed Programs Such As Industrial Arts, Home Economics, and Business Education Should Be Enriched, Expanded and Revised:

   Opportunities should be made available for students to experience activities that require planning, designing, patternmaking, blueprint reading, copying, cost estimating, constructing, processing, and assembling. Only a few elementary schools provide these programs at the present time. Existing programs in these areas should be revised to place additional emphasis upon relating laboratory experiences to occupational possibilities.

   The use of shops, portable shops, mobile units, laboratories, and other space already available should be considered. Areas abandoned by high schools as a result of mergers could be used to give students the opportunity to work with their hands and relate these experiences to occupational possibilities. Both short and long-range exploratory programs could be planned to utilize such spaces.

3. Expanded Counseling-Coordinating Programs Should Be Provided:

   Guidance and counseling programs need to be expanded. Qualified personnel should be available to help plan, to give direction, to coordinate, and to counsel with teachers, individual pupils, and groups of pupils in relation to educational plans, occupational possibilities, and personal problems; to plan meaningful field trips, to plan and arrange for real work experiences for students.

4. Personnel and Planning Time Should Be Provided:

   Provide teachers with sufficient release time from other duties so that they may prepare class materials for occupational exploration.

   A sufficient number of teacher aides should be provided to assist with the preparation of occupational exploration materials. Teacher aides should also be provided to assist the teacher with other duties necessary to implement occupational exploration programs. This would provide students with necessary experience in shop and laboratory activities. The objective should be exploration and not proficiencey in specific skills. This approach also supports industrial arts, home economics, and business education at the middle school level. *It is recommended that existing programs be utilized to provide occupational exploration shop and laboratory experiences on a broad basis.

5. Local Coordination Needed:

   In some schools or school systems coordinators might be provided to help plan and organize programs, assist with in-service activities, and locate materials and other resources. Such persons could coordinate, in one or more schools, the work of personnel in various subject areas as they implement occupational exploration objectives. The coordinator would act as a liaison between the school and the community, and the State Department; and he could implement dissemination of business and industrial materials in the school.

6. Use of Advisory Committees:

   Local advisory councils should be formed to give direction, assistance, and support to the teacher's efforts to bring pertinent information and experiences to students. Councils could be composed of lay and professional people, representing the school, home, and community. Such councils would be effective instruments for opening the doors of the business world, with its resources, to the classroom.

7. Guideline Materials Should Be Developed Correlating Subject Areas With Occupational Education Objectives:

   Guideline materials should be developed and made available for teachers and coordinators to use with basic subject content. These materials should be developed by the State Department of Education personnel and others; they should parallel the content of textbooks and any other course materials being used in each subject area. Planning grants could be established, enabling specialists from colleges, universities, and local school units to assist in this work. Some materials might be developed on a regional basis, and it may be desirable for local personnel to develop material and guides applicable only to their local situations. Films, filmstrips, and videotapes could be developed on certain occupations, such as those in the area of business, industry, agriculture, homemaking, distribution of goods and services, transportation, and health. Printed materials should be made available to all local personnel.

8. Commercial Occupational Materials Should Be Obtained:

   A wide variety of commercially produced occupational materials, on different reading and interest levels, should be provided for use by students, teachers, counselors, and coordinators. These materials might include occupational kits, pamphlets, booklets, tapes, films, filmstrips, recordings, and books, providing information about occupational clusters and specific job opportunities. Most schools have only a minimum amount of money available for this purpose. Therefore, industry should be encouraged to furnish such occupational information relevant to training.

9. Equipment Should Be Provided To Implement Manipulative Exploratory Programs:

A wide variety of equipment, related to a broad range of occupations should be provided to give students simulated manipulative experiences. Much of this equipment should be simple, inexpensive, and multi-purpose. This equipment should be used to help students acquire knowledge, discover aptitudes, develop attitudes, and become aware of the world of work. It should not be used to develop salable skills. Manipulative exercises with such equipment could motivate students and provide a balance with printed and visual materials.

Equipment could include simple drawing sets, wood and metal hand tools, simple power tools and machines, simple electronic equipment, homemaking equipment and appliances, seed germinators, and typewriters and other business machines.

10. State Level Direction and Coordination Should Be Provided:

The force of vocational education, general education, and guidance and counseling should be brought to bear on occupational exploration. Wide coordination is deemed necessary and desirable in developing activities, materials, and in-service opportunities. Such coordination would also assist institutions of higher education to initiate pre-service programs and orient prospective teachers to their roles in occupational exploration. In addition, State-level coordination should provide assistance in organizing local advisory councils on a regional basis. This would enable the State's full resources of business and industry to become more closely involved with public school programs of occupational exploration.

State-level coordination must also provide in-service training of staff personnel in the Department of Education. These individuals should be oriented to their role in a Statewide program of occupational orientation in the public schools. Attitude development--orienting individuals in the public school program toward the necessity of occupational exploration--should become a top priority.

11. Teacher Orientation Should Be Provided:

College level education courses should include one or more units showing future teachers how occupational information can be correlated with subject content. Some colleges might want to develop separate courses designed to introduce teachers to the occupational opportunities that can be taught in courses at various grade levels.

Funds should be made available to provide in-service workshops for State personnel, regional directors, local coordinators, counselors, and school personnel. Such workshops should provide direction and understanding of goals; they should develop a positive attitude toward coordinating the teaching of a subject content and occupational information. Personnel should be compensated for this time. In-service sessions could be conducted during the summer months to precede the initiation of new programs in the schools. Follow-up sessions could be scheduled for the summer following the initiation of such programs. Television could also be used effectively for in-service programs. Such instruction could be implemented at the State or local level.

12. Pilot Projects Should Be Established:

A number of pilot programs or projects could be planned and implemented. Since no one project can fit every school in the State, several projects, with various approaches, might be initiated. Approaches could include the development of group guidance techniques, the initiation or expansion of practical arts, and the use of specially prepared materials by the regular classroom teachers.

13. Evaluation Procedures Should Be Planned:

Definite plans should be established to evaluate the degree of success reached in providing occupational information to middle grade children through this plan. Evaluation plans should be built into the project itself.

After objectives have been clearly stated and understood, evaluation criteria should be developed. Data collecting methods should be determined, and personnel should be provided to be responsible for evaluation.

Procedures should be developed for disseminating findings and making recommendations. This information should then be used to expand those approaches most successfully providing students with improved understandings of the occupational opportunitites available to them.

APPENDIX

MATERIALS RELATING TO CAREER EDUCATION PROGRAMS

APPENDIX I

AN IN-SERVICE EDUCATIONAL PROGRAM OF VOCATIONAL EXPLORATION

For five years District 281 has been running an in-service career development course for the K-12 staff. The teachers get into the field and discuss the world of work with management and employees in an effort to supplement their experiential background. They are given complete responsibility for the outcomes of these meetings. Most of the progress in our district in career development concept must be credited to the graduates of this program.

1. Course: Vocational Exploration
2. Instructor: Staff counselor with vocational coordinator as consultant for each area
3. Course Length: Six weeks, four hours a day, five days a week, for a total of 120 hours
4. Time: Field trips and class sessions in the mornings
5. Dates: From Monday following end of school year for six weeks
6. Registration Fee: $69.50 for the entire course
7. Credits: Nine (9) district graduate credits toward salary increment
8. Class Size: Entire class or each section 12 or fewer students
9. For: All K-12 professional staff and administration
10. General Objectives of the Course:
    - A. To better equip the teacher as a vocational advisor for students.
    - B. To promote public relations values through communication and contact of teacher and employer.
    - C. To cause teachers to reassess attitudes toward student attitudes in school, socio-economically based values, and students' real needs in education.
    - D. To cause teachers to change subject content, teaching methods, resource materials, and move toward more concern for the individual.
    - E. To bring teachers in contact with employers of their students.
    - F. To provide the teacher with information concerning requirements and expectations of employers.
    - G. To provide an atmosphere for free discussion between teachers and employer concerning mutual problems and concerns.
    - H. To expose teachers to young people (perhaps former students) on the job.

I. To acquaint teachers with vocational areas they are not familiar with because of their background, education, or choice.

J. To stimulate the teacher to creative methods of education.

K. To expose the teacher to business training methods and resources.

L. To furnish materials and philosophy involving the concept of career development and its implementation into their field of endeavor.

M. To lay the foundation for creating the desirable atmosphere of truly comprehensive education as opposed to a strongly college-oriented method that now exists. This primarily concerns the required courses such as English and social studies and elective courses such as math and science.

11. General Procedure: The course is designed to expose teachers and administrators to the vocational aspects (career development) of business and industry that surround us in our own community. The hope is that teachers, through this experience, take a more realistic look at where the youth we have in our classrooms go and take positive corrective action in their subject areas. Changing attitudes at this level is the most practical approach to solving the education gap reflected in our follow-up studies as well as nation-wide statistics.

12. Survey of Costs: In charging $69.50 for the course, about one-half of the cost of the project is born by tuition when 30 students are involved. The remaining one-half is reimbursed through vocational funds available at the State Department of Education, Vocational Education Division: this funding arrangement supports three group facilitators, a coordinator, and a project director.

APPENDIX II

VOCATIONAL EXPLORATION IN-SERVICE PROJECT

Findings and Suggestions -- 1968

INTRODUCTION

Thirteen teachers from the junior and senior high schools with three group leader counselors participated in an in-service vocational exploration program this summer. The objective of the project was to utilize small group discussion in conjunction with first hand information from the community in evaluating our teachers and curriculum. This group was furnished with philosophy and information about the small group process, objectives in vocational education, and suggested materials for gathering data from their field trips. Along with the materials, 12 visits to local establishments were arranged. These trips were arranged so that the participant would have the bulk of his time spent in personal contact with employees from janitor to president.[1]

The goal of this project is really involved with the philosophy that guides it. I firmly believe that when professional people are given the responsibility of a task or problem that involves them, the best solution will evolve. In this case the "solution" is a start to a great task in the orientation of education to the needs of the students. To me, being somewhat biased, they are saying we cannot have a vocational class or even just a vocational program. We must have the vocational needs of the students foremost in every teacher's methods, materials, and mind in order to develop a meaningful educational opportunity for the student.

This report of findings and recommendations is being distributed at the request of the group. They are responsible for the materials and data and wish to make it known they are available to comment upon or discuss the contents at any time and with anyone. I feel it would be right to put their names and the places they visited upon this introduction.[2]

Cliff E. Helling
Vocational Director

1. See appendix for cover letter to the cooperating businesses and the summary sheet developed and used by the participants in gathering information from employees.

2.

Duane Bush	Hosterman Junior High School
William Driver	Cooper Senior High School
Byron Ellingson	Hosterman Junior High School
Hibbert Hill	Robbinsdale Senior High School
Andrew Hoffe	Robbinsdale Senior High School
Milo Hofius	Robbinsdale Junior High School
Robert Marsh	Robbinsdale Senior High School
Kenneth Kelly	Robbinsdale Senior High School
Sam Petrovcich	Robbinsdale Senior High School
Gaylord Rasmussen	Robbinsdale Senior High School
Robert Snustad	Cooper Senior High School
John Walker	Robbinsdale Senior High School
John Youngren	Cooper Senior High School
Ken Gorsky	Robbinsdale Senior High School
Arne Grangaard	Cooper Senior High School
Don Rex	Cooper Senior High School

Field Trips

Brookdale
N C.R. (National Cash Register)
Ward's
Western Electric
Prudential Electric
Prudential Insurance
Northwestern National Bank
Gold Bond Stamp Company
Pako Corporation
North Memorial Hospital
G. H. Tennant Company
Honeywell
W.O.C. (Work Opportunity Center)

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RECOMMENDATIONS TO ADMINISTRATION

I. Establish a means of continual evaluation of all school programs

  a. Specific goals that can be evaluated
  b. "Can't evaluate" has been used as a crutch too often
  c. Industry has recommended the schools evaluate their present programs and curriculum

    (1) Make use of recommendations of North Central, such as reduced class size and additional clerical help
    (2) Make better use of follow-up studies

II. Encourage seminar meetings such as the summer Vocational In-service Program

  a. To better equip the teacher as a vocational advisor for students
  b. To improve public relations through communication and contact between teacher and employer
  c. To cause teachers to reassess attitudes toward student attitudes in school, socio-economically based values, and students' real needs in education
  d. To cause teachers to change subject content, teaching methods, resource materials, and move toward more concern for the individual
  e. To bring teachers in contact with employers of their students
  f. To provide the teacher with information concerning requirements and expectations of employers
  g. To provide an atmosphere for free discussion between teachers and employer concerning mutual problems and concerns
  h. To expose teachers to young people (perhaps former students) on the job
  i. To acquaint teachers with vocational areas they are not familiar with because of their background, education, or choice
  j. To stimulate the teacher to creative methods of education
  k. To expose the teacher to business training methods and resources
  l. To lay the foundation for creating the desirable atmosphere of truly comprehensive education as opposed to a strongly college-oriented method that now exists. This primarily concerns the required courses such as English and social studies, and elective courses such as math and science.

III. Credit should be given to teachers for vocational courses that broaden their vocational background and knowledge, such as:

  a. A math or business teacher taking computer related courses at Control Data
  b. An English teacher taking a course in technical writing at Dunwoody

IV. Encourage the establishment of incentives other than grades

  a. Release from final exam for good grades
  b. Certificate of achievement
  c. Certificate of attendance
  d. Association of attendance in school and attendance on the job through various means

V. Establish better reading programs in all courses

a. Comprehension
b. Critical analysis
c. Remedial reading

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VI. Encourage field trips

a. Field trips should be made easier
b. Industry is extremely willing to cooperate

VII. Recognize that the low ability student has a place in the world

VIII. Expand on-the-job training programs

IX. Require counselors and encourage administrators and teachers of all subject areas to take vocational courses such as the summer vocational in-service program

X. Develop better dialog between industry and school by the formation of a committee composed of teachers, administrators, counselors, and businessmen that meets on a regular basis as suggested by Tennant Company and others

XI. Make better use of permanent record cards

a. Find out their use in industry
b. Should be presented and discussed with teachers

XII. Place more emphasis in grading upon student acceptance of responsibility

XIII. Meet the requirements for student success after graduation by an expanded curriculum

a. Technical writing
b. Adding machines
c. Key punch
d. Business machines
e. Graphic arts
f. Logic (all classes)
g. Blueprint reading

XIV. Consider meeting expanded curriculum needs by giving students credit for evening courses in the district or by the use of "zero" hour or seventh hour

XV. Emphasize that all educators need to accept the student as he is and develop his capabilities from that point

XVI. Note that administrators and counselors should attend departmental meetings

a. Have a meeting with each department each year
b. Have a representative at each departmental meeting
c. Leave time at departmental meetings for dialog

XVII. Give constant attention to the improvement of communications at all levels

XVIII. Establish the position of industrial arts coordinator

a. Acquaint students with industry
b. Use available federal funds
c. Make better provisions for vocationally-bound students

XIX. Secure a full time audio-visual person in all junior high schools

a. Allow a person to devote full time to the position
b. Utilize audio-visual materials from industry (junior and senior high schools)

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SUGGESTIONS FOR CURRICULUM

I. Establish flexibility by offering survey courses which could vary in length from two to nine weeks and could alternate with physical education in lieu of study halls.

  a. Industrial Arts -- graphic arts, metals, electronics, and drawing
  b. Home Economics -- cooking (both boys and girls), home management, and sewing
  c. Consumer Economics -- typing, business education, reading (speed and remedial), and shop math

II. Semester courses should be offered in all areas on a much larger scale than is presently being done.

  a. One-half credit should be given for each semester course taken
  b. English should be structured through the use of semester courses in grammar, spelling, and composition

    (1) Findings established the fact that there is an inability to communicate through the use of the written word
    (2) This was industry's greatest concern when asked to voice its criticism of the present school system

III. Every teacher should explore vocational opportunities as related to their subject areas. Technical writing, labor-management relations, technical illustrations, and advertising copywriting are a few of the areas that can be used as examples.

IV. Since a large number of students registered for courses in home economics, power, etc., and were unable to take the courses because of crowded conditions, we suggest the following means of meeting these needs without expanding present facilities.

  a. Use "zero" and seventh hours in the regular school day
  b. Give credit for evening courses
  c. Expand summer school

V. There is a need to recognize that much satisfaction comes from areas other than work. Work appears to be a means of making money, seeing how far I can go, and for some women, just something to do. Suggestions that we have to meet these needs are:

  a. Expanded opportunities to take courses in humanities, industrial arts, and elective physical education with emphasis on individual sports
  b. Greatly expanded extra-curricular programs should be offered both during the school day and after school
  c. Expanded night school program for both students and adults

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SUGGESTIONS FOR INSTRUCTION

I. Encourage students to begin to identify a vocational goal in life.

  a. Make teachers more aware of the vocational opportunites in the business world in order for students to become better informed.
  b. Use industry more as a resource aid.

    1. Industry indicated a sincere desire to offer resource people for use in the schools.
    2. Industry has encouraged field trips during school hours and out of school.

  c. Make better use of audio-visual materials to give the students a better perspective of vocational opportunities.

    1. Environmental sound track films should be made available through the guidance department as well as the classroom.
    2. Audio-visual department should become involved with the business world in making these films available.

II. Encourage student to begin to identify his attitudinal goal in life.

  a. Assist the student in assuming responsibility in school in the manner industry will later demand of him.

    1. Attendance -- more than one day absence per month is considered excessive.
    2. Tardiness -- industry will not tolerate the disruption of the work day because the employee is late.
    3. Deadlines -- industry demands that deadlines be adhered to.

  b. Encourage teachers to attempt to create self-motivation in each student.

    1. Industry selects individuals showing initiative and pride of workmanship.
    2. Teaching staff may create these attitudes by use of the following tools:

      a. Certificate of merit
      b. Display of work
      c Word of praise
      d. Varied assignments
      e. More student freedom in selection of curriculum goals and objectives

  c. Aid the student in the realization of the importance of developing sound work habits.

    1. Industry contends -- "wasted time is wasted money"
    2. Amount of reward is directly related to effort that is expended -- "nothing is free "

III. Use small group discussion which is effective in developing attitudes by an exchange of information to develop a better understanding of self and others.

IV. Emphasize analytical thinking more than subject matter memorization. Use of the discovery method approach rather than a lecture-type presentation --"teach, don't preach."

V. Encourage all educators to accept the student as he is and see him as an individual with dignity and worth regardless of dress, appearance, future goals, or native ability.

   a. The non-college bound student is worthy of the same amount of instructional emphasis as the college bound.

   b. More practical aspects of the curriculum need to be stressed.

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AN OPEN LETTER TO ALL ENGLISH TEACHERS

Dear Fellow Teacher:

Those of us who were fortunate to participate in the in-service vocational exploration course this past summer feel compelled to address you, the English teachers of District 281. It was unfortunate that a member of the English department was not able to participate in this program as several of the most often mentioned criticisms of the high school educational system were directed toward the discipline largely the responsibility of teachers of English.

In every place of business that we contacted a statement was made relative to the inability of the high school graduate to spell. Some supervisors stated that this is a trend that appears to be becoming worse. It is true of District 281 graduates as well as those from other schools.

Another common criticism made by the people we interviewed was the lack of skill of many employees in the ability to read. It was felt that more emphasis should be placed on those skills needed in different types of materials, particularly those of a practical or technical nature.

One of the prime tools used by employers in selection of their people is a written test; most businesses seem to be using a form of the Wonderlic test, and it is important that the job seeker be able to read and understand the items on this test. Test reading no longer is a classroom tool in which a poor score results only in an inconsequential failure, but becomes a critical factor in the ability of the individual to acquire a job and make a living.

A comment made by those in trades and industries stated that more emphasis should be placed in the writing of technical papers. This is a most promising employment area in which there is a great shortage of trained people. However, there does not appear to be any emphasis placed on this writing skill in high school.

The ability to structure letters that will communicate clearly is another skill that was mentioned as necessary for those who are hired directly out of high school.

The skills mentioned previously are needed by those who do not continue on to college but go immediately into the world of work. This group often is weak in these skills and should have remedial or additional work. Whether we like to admit it or not, certain basic skills are needed by everyone and our findings indicate that employers insist upon applicable knowledge in these skills.

It is the hope of the study group that you of the English department will feel free to contact us individually or collectively as you consider our findings.

DISTRIBUTIVE EDUCATION

A major function of this course is to prepare ourselves, our colleagues, and our students to better meet present day demands. We have found the background of teachers in regard to working in industry varies a great deal. Though some have worked in industry, the rapid changes in technology have rendered much of this experience obsolete. Therefore, based on the fact that the majority of our students do not finish college, we feel a need to better prepare our students to go into the business world.

Contacts made through the Distributive Education coordinators enabled us to visit the following businesses: Montgomery Ward, National Cash Register, Brookdale Shopping Center, Western Electric Company. At these establishments we had the opportunity to obtain first-hand knowledge from management and employees regarding working conditions, attitudes, goals, pressures, anxieties, and fringe benefits.

In order to facilitate our investigation of these businesses, we used the personal interview technique which was supplemented by the job identification fact sheet. (See enclosed original and revised sheets.) In order that each visit be most valuable, prior to the visitation the group prepared itself through the use of the Occupational Outlook Handbook and with the fact sheets provided by each firm and also through group discussion based on the varied background of each participant. (See enclosed firm fact sheet and list of participants and their course areas.)

Following each visit, a critique of the knowledge gained was held. It is our hope that this experience will help us to work toward the elimination of anxieties, frustrations, and misconceptions that students encounter when entering the world of work.

FINDINGS IN THE AREA OF DISTRIBUTIVE EDUCATION

1. Business was very open and cooperative. It was obvious that they wanted to further communicate with the schools. Western Electric, however, seemed leary about permitting us to talk with their employees.

2. Ample jobs are available for those who want to work.

3. Most people do not set up a plan that they follow accurately that leads to a life work or vocation.

4. Generally, in this area, few places visited required more than a high school diploma for work at the entry level.

5. The firms visited were often dissatisfied with the work attitudes of young applicants.

   a. Young applicants are not willing to work on demand (i.e., Saturday and Sunday).
   b. Young applicants many times expect more than business can pay.

    c. Personal appearance is important in determining whether or not a job is obtained (haircuts, dress, not appearing aggressive, etc.).
    d. Young applicants should have a purpose and some direction toward ultimate employment position and standard of living.
    e. Employers consider "time as money."

6. Firms emphasized the ideas that an employee has to produce.

7. The firms visited seemed to have better lines of communication between employer and employee than do the schools.

8. The firms visited were all concerned about hiring minority and disadvantaged people.

9. Unions are not prevalent in the area of distribution.

10. The primary teaching method used by employers is on-the-job training and in-service training. The need for college did not seem to be stressed.

11. The firms led us to believe that the general education of the young applicant is adequate.

12. The ability to communicate and get along with the public is highly important in the field of distribution.

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OFFICE EDUCATION

One third of this course was in the field of office education which involved visitations at the following concerns: Prudential Insurance Company, Northwestern National Bank, North Memorial Hospital, and Gold Bond Stamp Company.

The same format was used during this phase of the course as was used in all visitations, e.g., tour, interview, and discussion period.

Enthusiasm of business seemed very high and continued communication with education was stressed.

Emphasis in this area appeared more service-oriented than in previous phases of the course, and some variations noted were:

1. Younger women
2. Larger office staffs
3. Unusual types of fringe benefits
4. Closer inter-personal relations
5. Greater amount of turn-over
6. Less emphasis on government contracts
7. Interviews involved a wider range of job classifications
8. Business appeared more interested in a dialog with the school

FINDINGS IN THE AREA OF OFFICE EDUCATION

1. Business was very open and cooperative. It was obvious that communication with the group was desired as was expanded communications with education.

2. Ample jobs are available for those who want to work.

3. Most people do not set up a plan that they follow accurately that leads to a life's work or vocation.

4. Generally, in this area, few places visited required more than a high school diploma for work at the entry level. Management and supervisory personnel generally required a college degree.

5. The firms visited were often dissatisfied with the work attitudes of young applicants.

    a. Young applicants are not willing to work on demand (after 5, Saturday, Sunday).
    b. Young applicants many times expect more than business can pay.
    c. Personal appearance is important in determining whether or not a job is obtained (haircut, dress, reticent attitude, etc.).
    d. Young applicant was told when hired that there would be overtime but objected to working when called upon.
    e. Many employees, especially women, were short-time employees (2-3 years).

6. There was less emphasis to produce. The employee could get by with minimum effort.

7. The O.E. firms were more concerned about hiring minority group people. Their concern seemed genuine and they frequently created job openings for these people.

8. Unions are not prevalent in the area of office work.

9. Prospective employees usually relied upon basic skills taught in high school as their saleable commodity. This was supplemented by on-the-job training.

10. The firms felt that the general education of the young applicant is adequate.

11. The ability to communicate and get along with the public is one of the important factors in some of the jobs, although there are jobs where there is no contact with people outside the company.

12. All firms visited expressed dissatisfaction with high school graduates' writing and grammar skills.

13. Firms were emphatic about steno training being valuable for girls. Employees with this training usually started at a higher salary and frequently worked into higher positions in the company rapidly.

14. Firms emphasized accuracy over speed in work, including typing.

15. Outstate graduates have an advantage in securing jobs because they graduate two weeks early. Metropolitan graduates must take advantage of spring vacation if they are to be considered for jobs.

16. Filing skills should be emphasized more in high school.

17. There were more opportunities for advancement based on personal incentive than in the T and I firms.

18. Skills learned early in high school, especially typing, need to be reviewed and reinforced in the senior year.

TRADE AND INDUSTRY EDUCATION

The major function of this phase of this course was to determine the needs of our students and to prepare them for the role they will play in the complex structure of industry.

A greater variation of employer-employee relationships was noted than in other phases of the course. This became evident through our observation of the following industries:

1. Tennant Company
2. Honeywell
3. Western Electric
4. Pako

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Variations noted:

1. Some industries stressed further training more than others.

2. Some industries had a much closer and cordial employer-employee relationship than others. Size seemed to be the determining factor.

3. Union membership was more prevalent and necessary in the larger industries. Many employees felt that they could not function without the union, although they were more regimented in their particular job.

4. Companies employing a greater share of women tended to have a greater turnover and a lower pay scale.

5. Employees working for the larger companies have to be prepared to make a lateral move or accept a promotion anywhere in the country.

6. The larger companies who were getting government contracts made a more concerted effort to work with and employ the minority and hard-core groups. The smaller companies were interested in these programs, but did not have as structured programs.

NOTE: Though much of this may be obvious, it is important that these observations be mentioned to reinforce and enlarge previous experience and/or knowledge.

FINDINGS IN THE AREA OF TRADE AND INDUSTRY EDUCATION

1. In industry two groups of workers were noted.
    - A. The major wage earner -- mainly male.
        1. Advancement opportunities for this worker are limited by seniority and education in the trade.
            - a. Initiative and pride in work affect these opportunities.

B. Supplementary wage earner -- mainly female.
    1. This group was limited in their advancement opportunities -- held mainly dead-end jobs.

2. In the construction trades one type of wage earner was found.

A. The major wage earner -- male.
    1. Advancement opportunities are limited by the nature of the work.
    2. Apprenticeship opportunities are available -- this is almost a necessity for future workers.
        a. Age is a definite factor for entry into these programs. This requires the applicant to make an early vocational choice.
    3. Workers select the area in which they want to work.

B. Most workers in industry do not set up a plan to follow that leads to a life's work or vocation.

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3. In industry the amount of time you work is determined by the employer. If the product or part is needed you work overtime, if no work, you are laid off or transferred to another department.

4. In the construction trades -- work is seasonal. May require large amount of overtime in season -- followed by a period of lay-off.

5. Salaries.

A. Industry: Starting salaries are generally higher than sales occupations. Raises are automatic. Fringe benefits, profit sharing, stock options.

B. Trades: Salaries generally higher; some of this due to seasonal work and overtime.

6. Pressures, strains, and anxieties.

A. Industry: noise, possible injury and health hazards, or may be bumped to another job or shift.

B. Construction: lack security and continual employment; requires changing jobs (working for new employers).

7. Special problems in adjusting to the job.

A. Industry: Learning new skills required to operate machinery.

B. Construction: Learning new skills.

8. Important personal characteristics for being successful on the job.

A. Industry and Construction: dependability (attendance), responsibility, initiative.

9. Requirements necessary for the job other than required skill.

A. Industry and Construction: Health (good), be able to develop new skills on the job.

10. Recognition from work.

    A. Industry and Construction: Self satisfaction from doing a "good" job.

11. Attitudes towards unions: Both industry and construction workers feel the union is a necessity.

12. Attitudes towards minority groups.

    A. Industry has developed special programs to aid members of special groups.

    B. It appears the construction trades have not worked as hard to develop special programs.

13. Employer encouragement to get further training.

    A. Industry: appears to be a lack of encouragement.

    B. Construction: Sons encouraged to follow father.

14. Worker's relationship to the company as a whole.

    A. Industry: Workers in smaller companies showed more pride in the product.

    B. Construction: Lack of relationship.

15. How can the schools better prepare people for the world of work?

APPENDIX III

A SURVEY OF EMPLOYER ATTITUDES TOWARD WORK-ORIENTED STUDENTS IN ENTRY LEVEL JOBS

by

Ruth M. Anderson	Robbinsdale Senior High
Ray Falls	Robbinsdale Junior High
John Homme	Robbinsdale Junior High
Lucille Knudtson	Hosterman Junior High
Jim Kyle	Cooper Senior High
Cliff Nelson	Cooper Senior High
Joseph Pucel	Plymouth Junior High
Don Rex	Cooper Senior High
Chuck Tabor	Robbinsdale Senior High
LeRoy D. Unruh	Cooper Senior High
Kenneth D. Wall	Robbinsdale Junior High
Harriet Wilson	Cooper Senior High

July 1970

Independent School District 281 · Robbinsdale Area Schools

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CHAPTER I

THE PROBLEM AND DEFINITION OF TERMS USED

About 75 percent of high school seniors say that they are going on to college. Approximately 50 percent actually start college and less than 25 percent receive a college degree.

This means about 80 percent of the students out of high school are entering the work force with less than a college degree. It is the attempt of this study to follow a segment of the non-degree students to find which of their high school experiences are important to an employer that might hire them.

THE PROBLEM

Statement of the Problem

It is the purpose of this study to see if secondary education in District 281 is relevant to the work-oriented student entering the work force by answering the following questions:

1. Is the high school diploma important to the employer?
2. Is high school attendance important?
3. Are high school grades important?
4. What skills learned in high school are important?
5. What academic-oriented courses are important?
6. What non-academic oriented courses are important?
7. Is work experience in high school important?
8. How important are attitudes?

The Importance of the Study

The study may become the basis for objective communications between the educational community and the business community. Such an instrument of communication could bring about curriculum change in education to keep in step with the needs of business.

It is a beginning study with a set of defined terms and a rudimentary method of procedures that can be refined and reused by future groups.

Limitations of the Study

Limited time and finances were governing on most of the limitations of the study. The sample of the total population of employers was less than one percent but relatively well cross-sectioned.

The questionnarie was arrived at by a group concensus. It was short in construction so the respondant would not hurry to get done without giving thought to each item. The inexperience of the interviewers may have caused the respondants to view parts of the questionnaire in a different light.

The study group had no information from employers about number of entry level jobs before the study started.

The study should be reliable but the validity is in question because of the above reasons.

DEFINITION OF TERMS USED

Academic-Oriented Courses

The above term includes the following course areas: math, science, English, social studies, and foreign languages.

Attendance

Attendance in this study is meant to include days present in high school and days tardy.

Attitudes

In this study attitudes are defined as work habits and personal qualities.

Distributive Functions

These are establishments that deal primarily in the movement of goods from the wholesaler to the consumer.

Entry Level Employee

An entry level employee is a new employee who will become productive with no (or a reasonable amount of) on-the-job training.

Home Economics

These are establishments that deal in the care of human beings of all ages, interior decorating, and the care and preparation of food.

Non-academic Courses

These courses are essentially all courses that do not fall under the category of academic-oriented courses. Examples are physical education, music, industrial arts, home economics, business education, etc.

Office Functions

These are establishments that deal in areas that require clerical, secretarial, and/or arithmetic skills of employees.

Relevant

This term is defined as the answers to questions one through eight in the statement of the problem.

Trade and Industry

These are establishments that deal primarily with skilled and semi-skilled employees involved in construction or manufacturing.

Work Experience

Work experience is any full or part-time gainful employment not supervised by school personnel.

Work Oriented

This is a student whose goal is full-time employment rather than formal education of an academic or technical nature.

CHAPTER II

METHOD OF PROCEDURES

TYPE OF STUDY

The study was a survey of employers who are hiring or may in the future hire students from District 281.

SAMPLING TECHNIQUE

The employers were grouped by four different categories:

1. Trade and Industry
2. Home Economics
3. Office Functions
4. Distributive Functions

Within each one of these categories, two large employers were chosen and two small employers were chosen with the following criteria in mind:

1. They must have jobs at the entry level available to the high school graduate.

2. They must be in reasonable proximitry to District 281.

The personnel person in charge of job entry hiring was asked to fill out a questionnaire in each of the firms.

TOOLS FOR DATA COLLECTION

Comparison Methods

In Part A internal comparison was used for this portion; that is, to compare items against themselves. In Parts B, C, D, E, and F external comparison was used to compare items against each other.

Items for Comparison

In Parts A and B the items were derived as stated in the original problem. See Chapter I -- "The Problem." Parts C - F including items concerning skills, attitudes (personal qualities and work habits), and courses were also derived from the original problem. Sub-headings were derived from:

1. Skills and attitudes
    a. Talking with industry
    b. Rating forms from industry and business
    c. Group concensus of what could possibly be observed at the time of job application

2. Courses -- basic disciplines offered through the secondary schools of District 281.

Method of Tabulating Results

Simple tabulation under each heading was used in Part A. In Part B each item was given a value from left to right and then right to left with values of five to one. The number of responses for each blank was multiplied by its value and the sum for each item was calculated. In C - F ratings of individual items were totaled and then averaged.

CHAPTER III

REPORT OF THE STUDY

These businesses responded to the questionnaire:

1. Honeywell
2. G. H. Tennant Company
3. Swissmatic Screw Company
4. North Memorial Hospital
5. New Hope Nursing Home
6. Walgreen's
7. McDonalds
8. Prudential Insurance
9. Crystal State Bank
10. St. Louis Park Medical Center
11. Northwestern National Bank
12. Dayton's
13. Target
14. Brown Photo
15. Pako Manufacturing Company
16. Sears
17. Northern States Power Company
18. Gold Bond Stamp Company

Section A totals are found on the questionnaire. These totals show the halo effect of internal comparisons.

The Section B results are found on Figures I, II, and III. These are categorized by large and small businesses as well as total response to each item.

VOCATIONAL IN-SERVICE SURVEY

A. DIRECTIONS: Please rate the following categories in importance in considering an applicant for an entry level job.

	VERY	SOMEWHAT	NOT IMPORTANT
1. Diploma	12	10	
2. Attendance	20	1	
3. Grades	4	14	3
4. Work Experience	3	13	6
5. Appearance	13	7	1

B. DIRECTIONS: Rate the following characteristics, one against the other, by placing a mark on the appropriate blank. A mark closest to the work indicates high importance, a mark in the middle indicates equal importance, and a mark on either side of the middle indicates importance of one over the other.

Equal

1. Diploma :____:____:____:____:____: Attendance

2. Diploma :____:____:____:____:____: Grades

3. Diploma :____:____:____:____:____: Work Experience

4. Diploma :____:____:____:____:____: Appearance

5. Attendance :____:____:____:____:____: Grades

6. Attendance :____:____:____:____:____: Work Experience

7. Attendance :____:____:____:____:____: Appearance

8. Grades :____:____:____:____:____: Work Experience

9. Grades :____:____:____:____:____: Appearance

10. Work Experience :____:____:____:____:____: Appearance

C. DIRECTIONS: Rate the following skills in importance for a job applicant by numbering them in order of the importance beginning with number one (1) for the skill of highest value. If skills are of equal value, rate them with the same number.

_____ Reading

_____ Writing

_____ Spelling

_____ Comprehension

_____ Math Computation

_____ Clerical

_____ Mechanical

_____ Verbal Communication

_____ Other _______________

D. DIRECTIONS: Rate the following personal qualities in the same manner as you rated the above skills.

_____ Honesty

_____ Cheerfulness

_____ Tactful

_____ Friendly

_____ Creative

_____ Sincere

_____ Poised

_____ Industrious

_____ Others _______________

E. DIRECTIONS: Rate the following work habits in the same manner as the skills were rated.

_____ Punctuality

_____ Accepts Criticism

_____ Follows Directions

_____ Organizes Work

_____ Accuracy

_____ Job Interest

_____ Initiative

_____ Getting Along With Others

_____ Others _______________

F. DIRECTIONS: Please rate the following high school courses in order of importance as the skills were rated.

_____ Math

_____ Physical Education

_____ Science

_____ Industrial Arts

_____ English

_____ Music

_____ Social Studies

_____ Home Economics

_____ Foreign Languages

_____ Business Education

FIGURE I

CHARACTERISTICS RATED BY LARGE BUSINESS

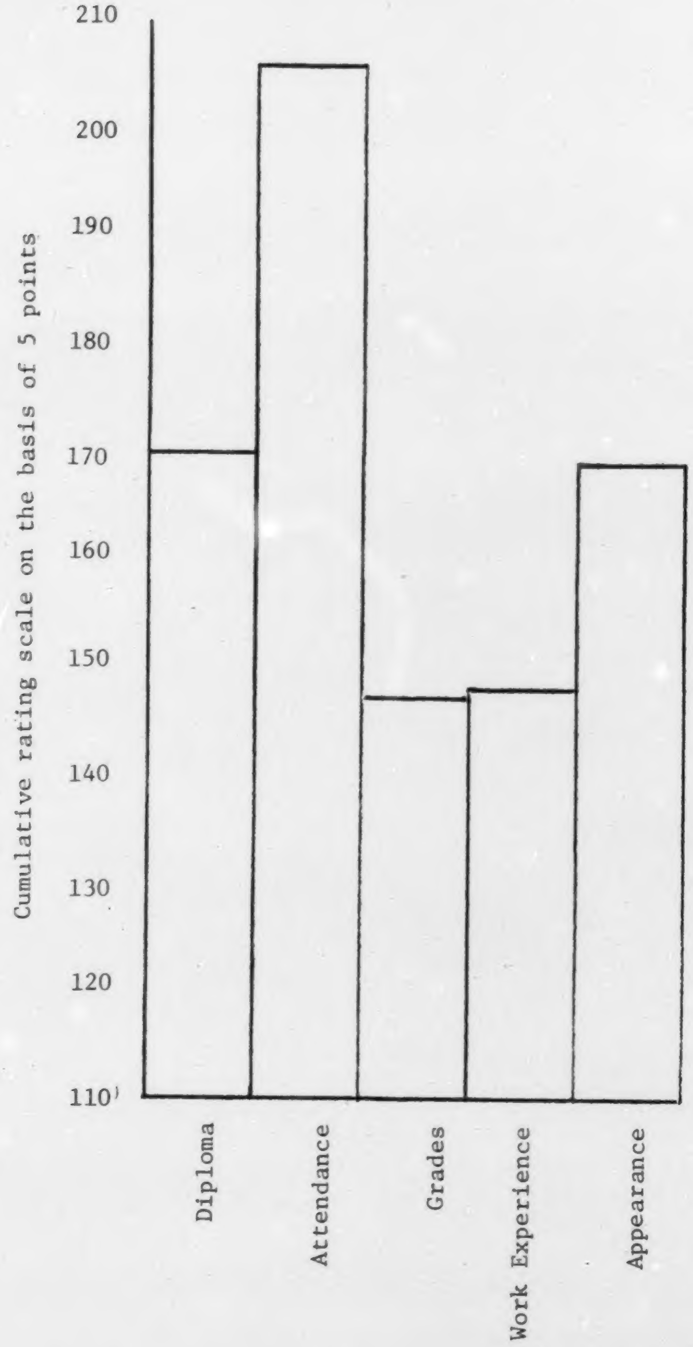


FIGURE II

CHARACTERISTICS RATED BY SMALL BUSINESSES

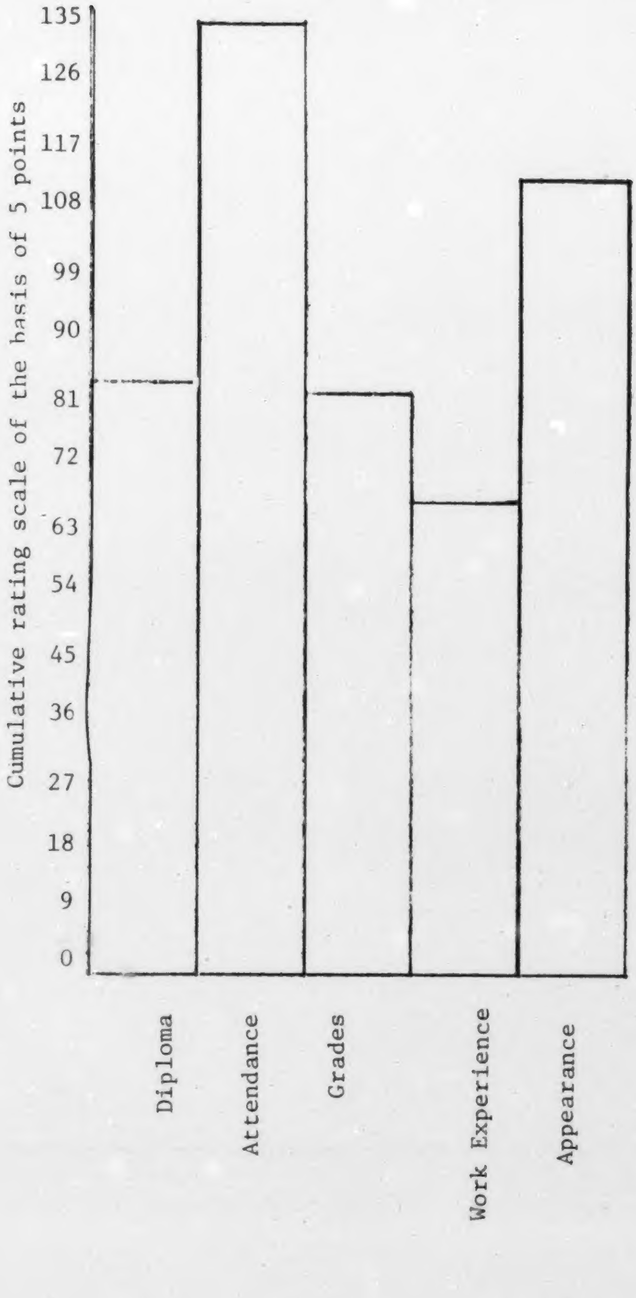
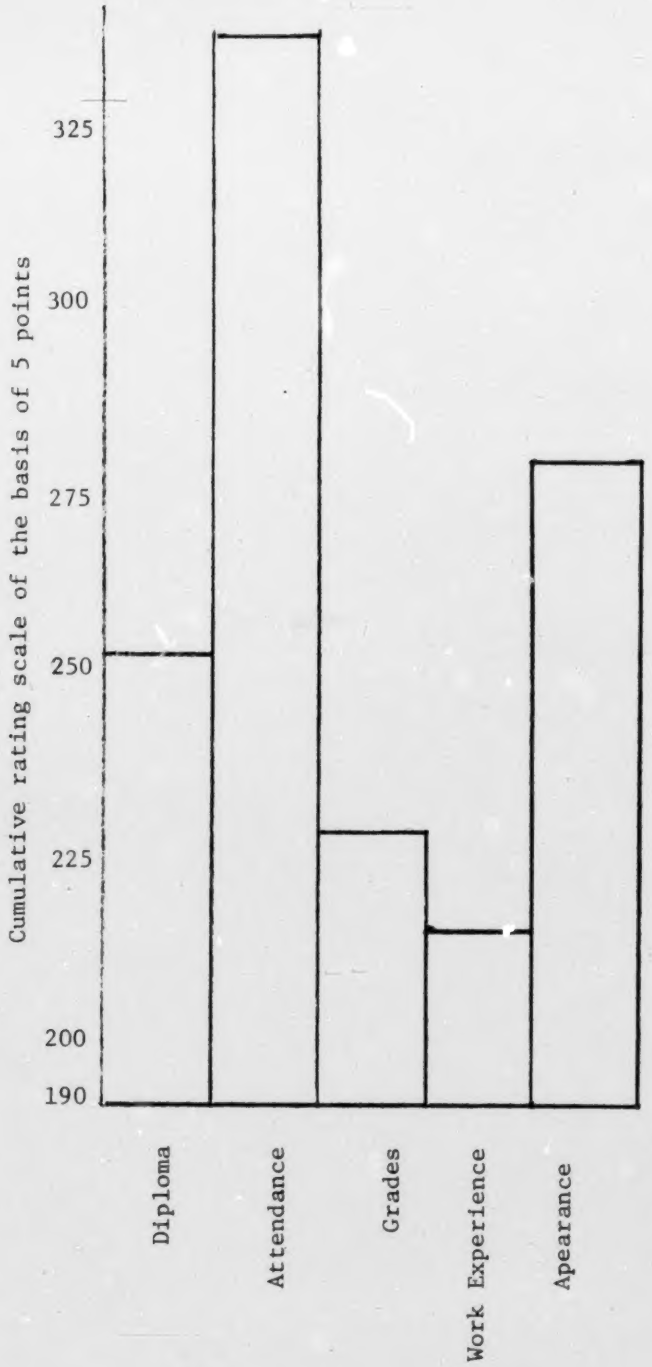


FIGURE III

TOTAL CHARACTERISTICS OF COMBINED SMALL AND LARGE BUSINESSES



Sections C, D, E, and F of the questionnaire dealt with rating skill, attitudes, and high school courses by numbering them in their order of importance. If the factors were of equal value, they were to be rated with the same number.

Section C

These skills were rated in the following order by the employers.

Skill	All (23)	Large (15)	Small (8)	Clerical (8)	Sales (7)
Verbal communications	1	2	1	1.5	2
Comprehension	2	1	3	1.5	1
Reading	3	4	2	3	3
Math computation	4	3	6	4.5	4
Spelling	5	7	4	6.5	6.5
Writing	6	5	5	6.5	5
Mechanical	7	8	7	8	6.5
Clerical	8	6	8	4.5	8

Section D

The following personal qualities were given this order of importance by the employers:

Qualities	All	Large	Small	Clerical	Sales
Honesty	1	1	1	1	2
Sincere	2	3	2	3	1
Industrious	3	2	3	2	7
Cheerfulness	4	4.5	4	4	3.5
Friendly	5	4.5	5	5	3.5
Tactful	6	6	6.5	6	5.5
Poised	7	7	6.5	7	5.5
Creative	8	8	8	8	8

Section E

These work habits were rated in the following order of importance by the employers:

Habits	All	Large	Small	Clerical	Sales
Punctuality	1	1	1.5	1.5	3
Follows directions	2.5	2	3.5	3	1.5
Initiative	2.5	3	3.5	4	1.5
Accuracy	4	6	1.5	1.5	5
Getting along with others	5	4.5	5	6	4
Job interest	6	4.5	6.5	7	7
Accepts criticism	7	7.5	6.5	5	5
Organizes work	8	7.5	8	8	8

Section F

The following high school courses were rated in the following order by the employers:

Courses	All	Large	Small	Clerical	Sales
English	1	2.5	1	1	1
Math	2	2.5	2	2	3
Business Education	3	1	3	3	2
Science	4	4	4.5	4	5
Industrial Arts	5	6	4.5	6	
Social Studies	6	5	6	5	4
Home Economics	7	7	7.5	7	
Foreign Languages	8	8	7.5		
Physical Education	9	10	9		
Music	10	9	10		

CHAPTER IV

CONCLUSIONS AND RECOMMENDATIONS

Large businesses rated the following items in their order of importance:

1. Attendance
2. Appearance
3. Diploma
4. Work experience
5. Grades

The difference between work experience and diploma was negligible. Small businesses rated the items as follows:

1. Attendance
2. Appearance
3. Diploma
4. Grades
5. Work experience

The difference between diploma and grades is negligible. The combined tabulations of the items were rated as follows:

1. Attendance
2. Appearance
3. Diploma
4. Grades
5. Work experience

Businesses rated student skills in the following order:

1. Verbal communications
2. Comprehension
3. Reading
4. Math computation
5. Spelling
6. Writing
7. Mechanical
8. Clerical

Businesses rated student personal qualities in the following order:

1. Honesty
2. Sincere
3. Industrious
4. Cheerfulness
5. Friendly
6. Tactful
7. Poised
8. Creative

Businesses rated student work habits in the following order.

1. Punctuality
2. Follow directions
3. Initiative
4. Accuracy
5. Getting along with others
6. Job interest
7. Accepts criticism
8. Organizes work

Businesses rated the importance of high school courses in the following order:

1. English
2. Math
3. Business Education
4. Science
5. Industrial Arts
6. Social Studies
7. Home Economics
8. Foreign Languages
9. Physical Education
10. Music

It should be noted that this section more than any of the others is a reflection of the type of businesses contacted.

The following recommendations were made by the group.

Attitude

1. All staff members expose their students to the attitudes listed by industry and business as important in serving an entry-level job.

Course Offerings

1. Expand course offerings to meet student needs.

2. Continue to review present course offerings to assure the relevancy of the course to today's and tomorrow's world.

3. Develop and strongly emphasize career development for students, staff, and administrators.

4. Place more emphasis on the instructional assistance part of the administrator's responsibilities and less on administrative duties.

Attendance

1. Staff members should identify all attendance problems early in the school year. This includes K - 12 staff members.

2. Numerous and varied positive rewards for attendance should be developed.

3. There should be specialized group and individualized team counseling for students identified under number one above.

4. An occupational "Severance Kit" for dropouts should be developed to assist the dropout in securing and holding a full-time job.

Grades

1. De-emphasize grades for work-oriented students.

2. Develop positive rewards for desired performance other than grades.

3. Investigate the desirability of revising or discarding the present grading system.

Others

1. Initiate counseling services in grades K - 6.

2. Develop more inservice courses in career development.

3. Have counselors more accessible to the students, staff, and community.

4. Have staff members develop more and better use of community resources.

5. Insist all disciplines at all levels place constant stress on verbal and written communication.

6. Continue and/or expand this study!

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CAREER PLANNING GUIDE

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Produced by Honeywell Inc., Minneapolis, Minnesota
A comprehensive career selection program which complements this guide is available through Honeywell EDINET.

DIRECTIONS

This is a list of about 500 careers or career areas organized into six general categories. It includes the entire range of jobs available in the United States. Some of these 500 careers have several additional jobs that are related to the ones listed. This list represents careers requiring all levels of education and training. They are listed in the general categories by skill emphasis so be sure to read over all titles in each of the categories. The numbers in parentheses following a career refer to other related career areas that should also be reviewed.

Read the directions carefully. This information will help you in your career planning by providing you with: (1) the breakdown of these occupations into related jobs, (2) sources of information for further study, (3) sources of educational and training requirements and post-high school institutions offering courses of study in these areas.

A. Read over all of the titles.
B. Select those occupations which interest you.
C. Bring your request to the counseling office and you will receive printed information relating to areas 1, 2, and 3 above.

TURE, FISHING, FORESTRY, ENVIRONMENTAL, AND ECOLOGY OCCUPATIONS

1. Agriculture, Forestry, and Fishing Industry Managers and Officials (16&17)
2. Agricultural Chemicals (16&17)
3. Agricultural Construction and Maintenance (16&17)
4. Agricultural Electrification (16&17)
5. Agricultural Mechanics (16&17)
6. Agricultural Mechanics Skills (16&17)
7. Agricultural Power and Machinery (16&17)
8. Agricultural Production (16&17)
9. Agricultural Products (Processing, Inspection, and Marketing) (16&17)
10. Agricultural Resources (Conservation, Utilization, and Services) (16&17)
11. Agricultural Science Occupations (16&17)
12. Agricultural Structures and Conveniences (16&17)
13. Agricultural Supplies/Services (16&17)
14. Agriculture, Other (16&17)
15. Air
16. Animal Science
17. Arboriculture
18. Dairy Products
19. Farm Business Management (04)
20. Farm Mechanics (16&17)
21. Feeds
22. Fertilizers (Plant Food)
23. Fish (Including Farms and Hatcheries)
24. Floriculture
25. Food Products
26. Forestry Protection
27. Forestry, Other
28. Forestry (Production, Processing, Management, Marketing, and Service)
29. Greenhouse Operations and Management
30. Landscaping
31. Logging (Harvesting and Transporting)
32. Nonfood Products
33. Nursery Operation and Management
34. Ornamental Horticulture (Production, Processing, Marketing, and Services)
35. Plant Science
36. Range
37. Recreation (04)
38. Seeds
39. Soil
40. Soil Management
41. Special Products
42. Turf Management
43. Water
44. Water Management
45. Wildlife (Including Game Farms and Hunting Areas)
46. Wood Utilization

37. Obstetrical Technician (16&17)
38. Occupational Therapy
39. Ophthalmic
40. Ophthalmic Dispensing
41. Optometrist Assistant
42. Orthopedic Assisting
43. Orthotics
44. Orthoptics
45. Osteopaths
46. Pharmacists
47. Physical Therapy
48. Physicians and Surgeons
49. Prosthetics
50. Psychiatric Aid
51. Psychology Occupations
52. Radiation Therapy
53. Radiological Health Technician (16&17)
54. Radiologic Technology (X-Ray)
55. Radiologic, Other
56. Rehabilitation
57. Sanitation Assistant
58. School Health Aid
59. Surgical Technician (Operating Room Technician) (16&17)
60. Veterinarians

09 HOME ECONOMICS AND PERSONAL HOME SERVICE OCCUPATIONS

1. Care and Guidance of Children
2. Child Development
3. Clothing Management, Production, and Services
4. Clothing and Textiles
5. Comprehensive Homemaking or Home Economics
6. Consumer Education
7. Family Health (07)
8. Family Relations
9. Food and Nutrition (04 - 16&17)
10. Food Management, Production, and Services (04 - 16&17)
11. Home Furnishings, Equipment, and Services
12. Home Management
13. Homemaking, Other
14. Homemaking: Preparation for Personal, Home, and Family Living
15. Housing and Home Furnishings
16. Institutional and Home Management and Supporting Services

14 CLERICAL, BUSINESS, OFFICE, LAW, COMMUNICATIONS, PUBLIC SERVICE, AND TRANSPORTATION OCCUPATIONS

1. Accountants
2. Accountants and Auditors
3. Accounting and Computing Occupations
4. Administrative Assistants (04)
5. Administrative Specialization Occupations (04)
6. Agents and Appraisers
7. Archivists
8. Bookkeepers
9. Budget and Management Analysis Occupations
10. Budget Management Analysts
11. Business Data Processing Systems Occupations
12. Cashiers
13. Clerical and Office Supervisors

40. Commercial Art Occupations
41. Commercial Artists Occupations
42. Commercial Fishery Occupations
43. Commercial Photography Occupations
44. Commercial Pilot Training
45. Communications
46. Composition, Makeup, and Typesetting
47. Computer Programmer
48. Construction and Maintenance Trades
49. Construction Industry Managers and Officials
50. Cook/Chef (09 - 04)
51. Cooling
52. Cosmetology
53. Custodial Services
54. Dairy Technology
55. Dental Hygiene (Associate Degree) (07)
56. Designers
57. Die Sinking
58. Diesel Mechanic
59. Drafting
60. Dressmaking
61. Drycleaning
62. Dry-Wall Installation
63. Electrical Appliances
64. Electrical Engineering
65. Electrical Occupations
66. Electrical Technology
67. Electric Power Generating Plants
68. Electric Welding
69. Electricity
70. Electroencephalograph Technicians
71. Electromechanical Technology
72. Electronic Technology
73. Electronics Occupations
74. Energy Conversion
75. Engineering -- Related Technology
76. Environmental -- Control Technology (01)
77. Fabric Maintenance Services
78. Fire and Fire Safety Technology
79. Fireman Training
80. Food Processing Technology (09)
81. Food Services Supervisor (09)
82. Foremanship, Supervision and Management Development (04)
83. Forestry Technology (01)
84. Foundry
85. Gas Appliances
86. Gas Welding
87. General Continuation
88. Geology Occupations
89. Glazing
90. Graphic Arts Occupations
91. Ground Operations
92. Health-Related Technology (07)
93. Heating
94. Heavy Equipment (Construction)
95. Home Economics-Related Technology (09)
96. Home Equipment Demonstrator
97. Hospital Children's Division Assistant (07)
98. Industrial Atomic Energy
99. Industrial Electricians
100. Industrial Electronics
101. Industrial Engineering
102. Industrial Technology
103. Industrial Uses of Radioisotopes
104. Installation, Operation, and Maintenance of Reactors
105. Instrument Maintenance and Repair
106. Instrumentation Technology
107. Instruments (Other than Watches and Clocks)
108. Interior Decorating (04)
109. Interior Decorators Assistant (04)
110. Laundering
111. Law Enforcement Training
112. Leatherworking
113. Lineman
114. Lithography, Photography, and Platemaking
115. Machine and Tool Design
116. Machine Shop
117. Machine Tool Operation
118. Maintenance, Heavy Equipment

04 DISTRIBUTION, EDUCATION, ENTERTAINMENT, MANAGERIAL, AND BUSINESS ADMINISTRATIVE OCCUPATIONS

1. Advertising Management Occupations
2. Advertising Services
3. Apparel and Accessories
4. Anthropology Occupations
5. Athletics and Sports Occupations
6. Automotive
7. Clergymen
8. College and University Education Occupations
9. Dancing Occupations
10. Distributive Education, Other
11. Dramatics Occupations
12. Educational Assistants and Training Specialists
13. Education of the Handicapped Occupations
14. Education Occupations, Other
15. Entertainment and Recreation Occupations
16. Finance and Credit (14)
17. Finance, Insurance, and Real Estate Managers and Officials
18. Floristry
19. Food Distribution (09)
20. Food Services (09 - 16&17)
21. General Merchandise
22. Hardware, Building Materials, Farm and Garden Supplies, and Equipment
23. History Occupations
24. Home Economists and Farm Advisors (01 - 09)
25. Home Furnishings (09)
26. Hotel and Lodging
27. Industrial Marketing
28. Insurance
29. International Trade
30. Music Occupations
31. Personal Services
32. Petroleum
33. Primary School and Kindergarten Education Occupations
34. Radio Operators
35. Railroad Conductors
36. Real Estate
37. Recreation and Tourism
38. Religion and Theology Occupations
39. Retail Trade, Other
40. Sales Distribution Management Occupations
41. Secondary School Education Occupations
42. Service Industry Managers and Officials
43. Ship Captains, Mates, Pilots, and Engineers
44. Social Sciences Occupations
45. Sociology Occupations
46. Vocational Education Occupations
47. Wholesale Trade, Other

07 HEALTH, MEDICINE, AND RELATED OCCUPATIONS

1. Central Supply Technician
2. Community Health Aid
3. Cytology (Cytotechnology)
4. Dental
5. Dental Assisting
6. Dental Hygiene (Associate Degree)
7. Dental Laboratory Technology
8. Dentists
9. Dietitians
10. Electrocardiograph Technicians
11. Electroencephalograph Technicians
12. Environmental Health (01)
13. Environmental Health Assistant (01)
14. Food Service Supervisor (09)
15. Health Occupations Education, Other (09)
16. Hermatology
17. Histology
18. Home Health Aid
19. Inhalation Therapy
20. Medical Assistant (Assistant in Physician's Office)
21. Medical and Dental Technology Occupations
22. Medical Emergency Technician
23. Medical Laboratory Assisting
24. Medical Laboratory Technology
25. Medicine and Health Occupations
26. Mental Health Technician
27. Mental Health Technology
28. Mental Retardation Aid
29. Miscellaneous Health Occupations Education
30. Mortuary Science
31. Nuclear Medical Technology (16&17)
32. Nursing
33. Nursing Assistance (Aid)
34. Nursing (Associate Degree)
35. Practical Nursing (LPN)
36. Nursing, Registered

11. Business Data Processing Systems Occupations
12. Cashiers
13. Clerical and Office Supervisors
14. Clerk-Typists
15. Communications Systems Clerks and Operators
16. Computer and Console Operators
17. Correspondence Clerks
18. Data-Methods and System-Procedures Analysts
19. Duplicating Machine Operators
20. Economics Occupations
21. Executive Secretary
22. File Clerks
23. Filing, Office Machines, and General Office Clerical Occupations
24. Freelance Writers
25. General Office Clerks
26. Information Communication Occupations
27. Inspectors and Investigators, Managerial, and Public Service
28. Interpreters and Translators
29. Interviewers and Test Technicians
30. Judges
31. Key Punch and Coding Equipment Operators
32. Lawyers
33. Librarians
34. Machine Operators: Billing, Bookkeeping, and Computing
35. Mail and Postal Clerk
36. Mail-Preparing and Mail-Handling Machine Operators
37. Materials Support Occupations (Transporting, Storing, and Recording)
38. Messengers and Office Boys and Girls
39. Miscellaneous Managers and Officials (04)
40. Museum Curators and Related Occupations
41. Museum, Library, and Archival Sciences Occupations
42. Occupations in Law and Jurisprudence
43. Office Managers and Chief Clerks (04)
44. Office Occupations, Other
45. Peripheral Equipment Operators
46. Personnel Assistants
47. Personnel and Training Administration Occupations (04)
48. Personnel, Training, and Related Occupations
49. Planning and Production Clerks
50. Political Science Occupations (04)
51. Programmers
52. Public Administration Managers and Officials
53. Public Relations Management Occupations
54. Purchasing Management Occupations
55. Quality Control Clerks
56. Receptionists and Information Clerks
57. Secretaries
58. Social and Welfare Work Occupations (04)
59. Stenographers
60. Stenographic, Secretarial, and Related Occupations

16 & 17 SKILLED, TECHNICAL, AND ENGINEERING OCCUPATIONS

1. Aeronautical Engineering
2. Aeronautical Technology
3. Agricultural Electrification Technology (01)
4. Agricultural Engineering (01)
5. Agricultural Machinery and Equipment Technology (01)
6. Agricultural-Related Technology (01)
7. Agricultural Structures and Conveniences (01)
8. Agricultural Technology (01)
9. Agricultural Technology, Other (01)
10. Air Conditioning
11. Aircraft Maintenance
12. Aircraft Operations
13. Airframe
14. Airplane Pilots and Navigators
15. Animal Science
16. Appliance Repair
17. Architectural Occupations
18. Architectural Technology (Building Construction)
19. Architecture and Engineering (Occupations in)
20. Art Occupations
21. Astronomy Occupations
22. Automotive Services
23. Automotive Technology
24. Aviation Occupations
25. Baker
26. Barbering
27. Biological Science Occupations
28. Blueprint Reading
29. Body and Fender
30. Bookbinding
31. Brazing and Soldering Occupations
32. Business Machine Maintenance
33. Carpentry
34. Ceramic Engineering
35. Chemical Engineering
36. Chemical Technology
37. Chemistry Occupations
38. Child Care Center Assistant (09)
39. Civil Technology

115. Machine and Tool Design
116. Machine Shop
117. Machine Tool Operation
118. Maintenance, Heavy Equipment
119. Manufacturing Industrial Managers and Officials
120. Marine Engineering
121. Maritime Occupations
122. Masonry
123. Mathematics (Occupations in) (04)
124. Mathematics and Physical Sciences Occupations
125. Meat Cutter
126. Mechanical Engineering
127. Mechanical Technology
128. Mechanics
129. Medical Laboratory Assisting (07)
130. Metal Patternmaking
131. Metal Trades, Combined
132. Metallurgical Technology
133. Metallurgy
134. Metallurgy and Metallurgical Engineering
135. Metalworking
136. Meteorology Occupations
137. Millwork and Cabinet Making
138. Mining and Petroleum Engineering
139. Mining Industry Managers and Officials
140. Miscellaneous Professional, Technical, and Managerial Occupations (04 - 14)
141. Miscellaneous Technical Education (04)
142. Motor Repairman
143. Nuclear Engineering
144. Nuclear Technology
145. Nursing (Associate Degree) (07)
146. Oceanographic Technology (Physical, Biological, and Fisheries)
147. Office-Related Technology (14)
148. Operation, Heavy Equipment
149. Painters and Related Occupations
150. Painting and Decorating
151. Personal Services (09)
152. Petroleum Technology
153. Photoengraving
154. Photographic Laboratory and Darkroom Operation
155. Photography Occupations
156. Physics Occupations
157. Plant Science
158. Plastering
159. Plastics Occupations
160. Plumbing and Pipefitting
161. Police (Law Enforcement and Corrections) Science Technology
162. Power Plant
163. Printing Press Occupations
164. Product Design
165. Production
166. Public Service Occupations (04 - 14)
167. Radio/Television
168. Radiography
169. Radiologic Technology (X-Ray)
170. Refrigeration
171. Roadway Technology
172. Roofing
173. Sanitation Technology
174. Scientific Data Processing (14)
175. Seamanship
176. Sheet Metal
177. Ship and Boat Operation and Maintenance
178. Shoe Manufacturing
179. Shoe Repair
180. Silk Screen and Printing
181. Small Engine Repair, Internal Combustion
182. Sound Recording, Transcribing, Reproduction Occupations
183. Specialization, Other
184. Stationary Energy Source Occupations
185. Stock and Inventory Clerks (14)
186. Structural Technology
187. Surveyors
188. Supervisory and Administrative Management Occupations (04)
189. Systems Analysis (14)
190. Systems Analyst Technology
191. Tailoring (09)
192. Teacher's Assistant at the Preprimary Level (04)
193. Tellers (14)
194. Textile Production and Fabrication (09)
195. Tool and Die Making
196. Trade and Industrial Occupations, Other
197. Traffic, Rate and Transportation Clerks
198. Transportation
199. Transportation, Communication, and Utilities Industry Managers and Officials
200. Typing and Related Occupations (14)
201. Typists (14)
202. Upholstering
203. Ventilating (Filtering and Humidification)
204. Waiter/Waitress
205. Watchmaking and Repair
206. Welding (Combination)
207. Welding and Cutting
208. Wholesale and Retail Trade Managers and Officials (04 - 14)
209. Window Display (04)
210. Woodworking
211. Writers and Editors, Motion Picture, Radio, and Television (04)
212. Writers and Editors, Publishers (04)
213. Writing Occupations (04)

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EDUCATIONAL OPPORTUNITIES FOR CAREER PREPARATION

s material is needed for Step C under the directions on other side.)

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COLLEGES

CODE	NAME
C1	Anoka Ramsey State Junior College
C2	Augsburg College
C3	Austin State Junior College
C4	Bemidji State College
C5	Bethany Lutheran College
C6	Bethel College
C7	Brainerd State Junior College
C8	Carleton College
C9	College of Saint Benedict
C10	College of St. Catherine
C11	College of St. Scholastica
C12	College of St. Theresa
C13	College of St. Thomas
C14	Concordia College (Moorhead)
C15	Concordia College (St. Paul)
C16	Corbett Junior College
C17	Dr. Martin Luther College
C18	Fergus Falls State Junior College
C19	Golden Valley Lutheran College
C20	Gustavus Adolphus College
C21	Hamline University
C22	Hibbing State Junior College
C23	Inver Hills State Junior College
C24	Itasca State Junior College
C25	Lakewood State Junior College
C26	Lea College on Lake Chapeau
C27	Macalester College
C28	Mankato State College
C29	Mesabi State Junior College
C30	Metropolitan State Junior College
C31	Minneapolis School of Art
C32	Minnesota Bible College
C33	Moorhead State College
C34	Normandale State Junior College
C35	North Central Bible College
C36	North Hennepin State Junior College
C37	Northland State Junior College
C38	Rainy River State Junior College
C39	Rochester State Junior College
C40	St. Cloud State College
C41	Saint John's University
C42	Saint Mary's College
C43	St. Mary's Junior College
C44	Saint Olaf College
C45	St. Paul Bible College
C46	Southwest Minnesota State College
C47	University of Minnesota
C48	University of Minnesota, Duluth
C49	University of Minnesota, Morris
C50	University of Minnesota Technical College -- Crookston
C51	University of Minnesota Technical College -- Waseca
C52	Vermilion State Junior College
C53	Willmar State Junior College
C54	Winona State College
C55	Worthington State Junior College

PRIVATE SCHOOLS

CODE	NAME
P1	Academy for Home Study, Inc.
P2	Academy of Accountancy
P3	Advance Trades School, Inc.
P4	Alexander Hamilton Institute, Inc
P5	American Automation Training Centers, Inc.
P6	American Motel School, Inc.
P7	American School
P8	Art Instruction Schools
P9	Atlantic School
P10	Atlantic School of California
P11	Bell and Howell Schools

CODE	NAME
P86	Universal Airline Personnel School, Inc.
P87	Universal Heavy Construction Schools, Inc.
P88	Universal Motel Schools, Inc.
P89	Universal Training Service, Inc.
P90	Victor Business School
P91	Washington School of Art
P92	Wayne School, Inc.
P93	Weaver Airline Personnel School
	William Mitchell

APPRENTICESHIP TRAINING

CODE	NAME
A1	Artist, Commercial
A2	Artist, Lithocolor
A3	Artist, Litho Lay-out and Stripper
A4	Asbestos Worker
A5	Baker
A6	Beveler, Glass Silverer
A7	Blacksmith
A8	Boat Builder, Wood
A9	Boilermaker
A10	Bookbinder
A11	Bracemaker
A12	Bricklayer
A13	Buttermaker
A14	Cabinetmaker
A15	Cameraman, Litho
A16	Cameraman, Motion Picture
A17	Carman (R.R.)
A18	Carpenter
A19	Carpenter, Coach
A20	Cement Mason
A21	Cheesemaker
A22	Color Matcher and Ink Maker
A23	Compositor
A24	Cook
A25	Coremaker
A26	Cutter and Auto Glazier, Safety Class
A27	Cutter, Cloth
A28	Cutter, Die Envelope
A29	Cutter, Fur
A30	Cutter, Glass
A31	Cutter, Granite
A32	Cutter, Meat
A33	Cutter, Paperstock
A34	Cutter, Warehouse Class
A35	Die Sinker
A36	Draftsman, Architectural
A37	Draftsman, Electrical
A38	Draftsman, Engineering
A39	Draftsman, Mechanical
A40	Draftsman, Ornamental Iron
A41	Electrical Shopman
A42	Electrical Wireman
A43	Electrician, Maintenance
A44	Electrician, Powerhouse
A45	Electrician, (R.R.)
A46	Electroplate
A47	Electroplate, Finisher
A48	Electroplate, Molder
A49	Engineer, Operating (Diesel)
A50	Engineer, Operating (Steam)
A51	Engraver, Hand
A52	Engraver, Steel Die
A53	Feeder
A54	Finisher, Optical
A55	Finisher, Watchglass
A56	Fitter, Sprinkler
A57	Floor Coverer
A58	Furniture Finisher
A59	Furniture Maker
A60	Furrier
A61	Glazier

CODE	NAME
A136	Pipefitter, (Gas and Oil)
A137	Pipefitter, Maintenance
A138	Pipefitter, (Refrigerator)
A139	Pipefitter, (Steam)
A140	Plasterer
A141	Plate Maker, Class "B"
A142	Plate Maker, Litho
A143	Plate Maker, Litho Offset
A144	Plate Maker, Rubber
A145	Plate Preparer, Litho Offset
A146	Plumber
A147	Press Assistant, Litho Offset
A148	Press Feeder, Litho Offset
A149	Press Feeder, Platen
A150	Press Feeder, Assistant, Cylinder
A151	Pressman, Combination Cylinder and Platen
A152	Pressman, Class "A"
A153	Pressman, Class "B"
A154	Pressman, Cylinder
A155	Pressman, Gordon
A156	Pressman, Harris
A157	Pressman, Keely
A158	Pressman, Litho Offset
A159	Pressman, Mehle
A160	Pressman, Platen
A161	Pressman, Rotary
A162	Pressman, Rotoengraveur
A163	Pressman, Steel and Die
A164	Pressman, Web
A165	Printer, Class "C"
A166	Printer, Job Shop
A167	Printer, Photoengraver
A168	Rule Maker, Steel Die
A169	Serviceman, Fuel Injection
A170	Serviceman, Scale
A171	Serviceman, Shoe
A172	Set-up Man, International Glue
A173	Sheetmetal Maintenance
A174	Sheetmetal, R.R.
A175	Sheetmetal Worker
A176	Shopman, Architectural and Ornamental Iron
A177	Sign Hanger
A178	Silverer and Beveler, Glass
A179	Stereotyper
A180	Stripper, Litho
A181	Stripper, Litho Color
A182	Stripper, Litho Lay-out Artist
A183	Stripper and Printer, Photoengraver
A184	Taper, Dry Wall
A185	Technician, Dental
A186	Technician, Electronic Control
A187	Technician, Radio and T.V.
A188	Terrazzo Worker
A189	Tile Setter
A190	Tool and Die Maker
A191	Treater, Heat
A192	Tube Bender, Neon
A193	Upholsterer
A194	Upholsterer, Automotive
A195	Watchmaker

For such services or more specific information, assistance may be furnished by any of the following:

Director
Division of Apprenticeship
110 State Office Building
St. Paul, MN 55101

Bureau of Apprenticeship and Training
U.S. Department of Labor
Room 134, Federal Building
316 Robert Street
St. Paul, MN 55101

Manpower Services, Local Offices

Apprenticeship Information Center
Youth Opportunity Center Offices: St. Paul, Minneapolis, Duluth

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CODE	NAME
P1	Academy for Home Study, Inc.
P2	Academy of Accountancy
P3	Advance Trades School, Inc.
P4	Alexander Hamilton Institute, Inc.
P5	American Automation Training Centers, Inc.
P6	American Motel School, Inc.
P7	American School
P8	Art Instruction Schools
P9	Atlantic School
P10	Atlantic School of California
P11	Bell and Howell Schools
P12	Brown Institute
P13	Capitol Radio Engineering Institute, Inc.
P14	Career Academy, Inc.
P15	Central Technical Institute
P16	Cleveland Institute of Electronics
P17	Columbia School of Broadcasting
P18	Commercial Business School, Inc.
P19	Commercial Trades Institute
P20	Control Data Institute
P21	Dale Carnegie Course: Sponsored by Morris L. Norman and Associates
P22	Dale Carnegie: Sponsored by Sam Carlson and Associates
P23	DeVry Institute of Technology
P24	Diesel Truck Driver Training School, Inc.
P25	Diversified Education, Inc.
P26	Duluth Business University
P27	Dunwoody Industrial Institute
P28	Elba Systems [illegible]
P29	Electronic Computer Programming Institute
P30	Estelle Compton Models Institute
P31	Famous Artists School
P32	Famous Photographers School
P33	Famous Schools
P34	Famous Writers School
P35	Foley Saw and Tool Maintenance School
P36	Form 1040 Tax School
P37	Gale Institute
P38	Globe College of Business, Inc.
P39	H & R Block Inc. Income Tax School
P40	Hanson Mechanical Trade School
P41	Hartford Airline Personnel School
P42	Humboldt Institute, Inc.
P43	IBM Data Processing Education Center
P44	Institute of Business and Computer Education
P45	Insurance Adjusters School
P46	International Accountants Society, Inc.
P47	International Correspondence Schools
P48	Interstate Business College
P49	Jetma Technical Institute
P50	LaSalle Extension University
P51	Lewis Hotel-Motel Schools
P52	Lincoln Extension Institute, Inc.
P53	McConnell Airline School, Inc.
P54	Mankato Commercial College
P55	Medical Institute of Minnesota
P56	Minneapolis Business College
P57	Minneapolis Drafting School
P58	Minnesota Institute of Medical and Dental Assistants
P59	Minnesota School of Bartending, Inc.
P60	Minnesota School of Business
P61	Motel Management Institute
P62	Motel Managers Training Corporation
P63	National Institute of Meat Packing
P64	National Reading Institute of Minnesota, Inc.
P65	Nettleton Commercial College
P66	Northern Technical School of Business
P67	Northwest Schools
P68	Northwest Technical Institute
P69	Northwestern Electronics Institute
P70	Palmer Writers School, Inc.
P71	Patricia Stevens Career and Finishing School
P72	Personal Dynamics, Inc.
P73	Piccadilly, Ltd.
P74	Professional Business Institute
P75	Rasmussen School of Business
P76	Reading Dynamics of Minnesota
P77	Sawyer School of Business
P78	Speed Read Plus
P79	St. Cloud Business College
P80	Sales Training of Twin Cities, Inc.
P81	Star Brake School
P82	State Bar Review Course
P83	United Electronics Institute
P84	United Systems, Inc.
P85	United Technical Institute

A48	Electroplate, Molder
A49	Engineer, Operating (Diesel)
A50	Engineer, Operating (Steam)
A51	Engraver, Hand
A52	Engraver, Steel Die
A53	Feeder
A54	Finisher, Optical
A55	Finisher, Watchglass
A56	Fitter, Sprinkler
A57	Floor Coverer
A58	Furniture Finisher
A59	Furniture Maker
A60	Furrier
A61	Glazier
A62	Glazier, Safety Glasscutter and Auto
A63	Glazier, Stained Glass
A64	Grainer, Litho
A65	Granite Polisher
A66	Granite Sand Blastman
A67	Ink Maker, Color Matcher
A68	Iron Worker
A69	Jeweler
A70	Lab Assistant, Litho Chemical
A71	Lab Technician, Optical
A72	Lather
A73	Layout Man, Structural
A74	Lens Grinder, Optical
A75	Lineman, Combination Telephone
A76	Lineman, Electrical Power
A77	Lithographer, Class "C"
A78	Lock Smith
A79	Machine Adjuster, Envelope
A80	Machinist
A81	Machinist, Automotive
A82	Machinist, Composing Room
A83	Machinist, Lino Type
A84	Machinist, Maintenance
A85	Machinist, Printing Press
A86	Machinist, (R.R.)
A87	Machinist, Tool Room
A88	Machine Operator, Automatic Stitching and Tipping
A89	Machine Operator, Folding
A90	Machine Operator, Gathering
A91	Machine Operator, Glass
A92	Machine Operator, Ruling
A93	Mailer
A94	Marble Setter
A95	Marking Devices Maker, Rubber and Metal
A96	Mechanic, Aircraft and Engine
A97	Mechanic, Auto Body and Fender
A98	Mechanic, Automobile
A99	Mechanic, Business Machine
A100	Mechanic, Farm Tractor and Equipment
A101	Mechanic, Heavy Equipment
A102	Mechanic, Highway Equipment
A103	Mechanic, Line Casting Machine
A104	Mechanic, Motor Truck and Tractor
A105	Mechanic, Plant Maintenance
A106	Mechanic, Sewing Machine
A107	Metal-smith, Aircraft
A108	Metal Spinner
A109	Meter Tester
A110	Miller
A111	Millwright
A112	Millwright, Maintenance
A113	Molder
A114	Monument Setter
A115	Offset Press Assistant, [illegible]
A116	Opaquer, Litho
A117	Operating, Litho Perfecting
A118	Operating, Litho Photo Contact Room
A119	Operator, Litho Offset Davidson
A120	Painter
A121	Painter, Automobile
A122	Painter, Coach
A123	Painter, Sign and Pictorial
A124	Pattern Maker
A125	Photoengraver, Copper Etcher
A126	Photoengraver, Finisher
A127	Photoengraver, Layout Man
A128	Photoengraver, Proofer
A129	Photoengraver, Rotograveur
A130	Photoengraver, Router and Blocker
A131	Photoengraver, Zinc Etcher
A132	Photographer, (Commercial)
A133	Photographer, Litho Half-Tone Line
A134	Photographer, Photoengraver
A135	Photographer, (Portrait)

Director
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110 State Office Building
St. Paul, MN 55101

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Room 134, Federal Building
316 Robert Street
St. Paul, MN 55101

Manpower Services, Local Offices

Apprenticeship Information Center
Youth Opportunity Center Offices: St. Paul, Minneapolis, Duluth

HOSPITALS

CODE	NAME
H1	Abbott Hospital School of Nursing
H2	Northwestern Hospital School of Nursing
H3	Arthur B. Ancker Memorial School of Nursing
H4	Fairview Hospital School of Nursing
H5	Hennepin County General Hospital School of Nursing
H6	Lutheran Deaconess Hospital School of Nursing
H7	Methodist Hospital School of Nursing
H8	Naeve Hospital School of Nursing
H9	St. Barnabas Hospital School of Nursing
H10	St. Luke's Hospital School of Nursing
H11	The Swedish Hospital School of Nursing
H12	Bethesda Lutheran Hospital School of Practical Nursing
H13	Miller Hospital Vocational School of Practical Nursing
H14	St. Francis Hospital School of Practical Nursing

VOCATIONAL-TECHNICAL SCHOOLS

CODE	NAME
V1	Albert Lea Area Vocational-Technical School
V2	Alexandria Area Vocational-Technical School
V3	Anoka Area Vocational-Technical School
V4	Austin Area Vocational-Technical School
V5	Bemidji Area Vocational-Technical School
V6	Brainerd Area Vocational-Technical School
V7	Canby Area Vocational-Technical School
V8	Dakota County Area Vocational-Technical School
V9	Detroit Lakes Area Vocational-Technical School
V10	Duluth Area Vocational-Technical School
V11	Eveleth Area Vocational-Technical School
V12	Faribault Area Vocational-Technical School
V13	Granite Falls Area Vocational-Technical School
V14	Hibbing Area Vocational-Technical School
V15	Hutchinson Area Vocational-Technical School
V16	Jackson Area Vocational-Technical School
V17	Mankato Area Vocational-Technical School
V18	Minneapolis Area Vocational-Technical School
V19	Moorhead Area Vocational-Technical School
V20	Suburban Hennepin County Vocational-Technical School
V21	Pine City Area Vocational-Technical School
V22	Pipestone Area Vocational-Technical School
V23	Ramsey-Washington County Area Vo-Tech Center 916
V24	Rochester Area Vocational-Technical School
V25	St. Cloud Area Vocational-Technical School
V26	St. Paul Area Vocational-Technical School
V27	Staples Area Vocational-Technical School
V28	Thief River Falls Area Vocational-Technical School
V29	Wadena Area Vocational-Technical School
V30	Willmar Area Vocational-Technical School
V31	Winona Area Vocational-Technical School

OTHER

CODE	NAME
01	Mounds-Midway School of Nursing
02	Crookston School of Practical Nursing
03	Fergus Falls Practical Nursing Program
04	Grand Rapids Practical Nursing Program
05	Hastings Practical Nursing Program
06	Meeker County School of Practical Nursing
07	New Ulm School of Practical Nursing
08	Red Wing School of Practical Nursing
09	Rochester School of Practical Nursing
010	Job Entry Skills Do Not Require Training

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APPENDIX V

March 28, 1972

THE COMMUNITY AFFAIRS PROGRAM OF
DISTRICT 281, ROBBINSDALE AREA SCHOOLS

The position of community affairs coordinator was established in August, 1970, through a two-year exemplary vocational education proposal written by Dr. Cliff Helling, vocational director.

The main objectives of the program are:

1. To develop and organize a central Community Resource Utilization Program for the use of teachers, students, and staff of District 281. Community resources catalogued and scheduled by the community affairs office include:

   a. Resource persons coming into the classroom

   b. Field trips going into the community

   c. Materials from the community to be used by teachers and students

2. To organize faculty resources to be used by the community through the organization of a District 281 Speakers' Bureau.

3. To consolidate community services under one department through the community school concept. Community services coordinated by the community affairs coordinator include:

   a. Coordinating and operating the avocational and basic adult education classes

   b. Scheduling of district facilities

   c. Establishing a Community School Council and meeting regularly with park and recreation directors. These groups function as operational channels of communication between the district and community.

4. To provide a program of non-paid career exploration for junior and senior high school students.

(1.) The Community Resource Utilization Program was the first program to be established in the district. Because School District 281 is made up of all parts of seven municipalities and because of its proximity to the Minneapolis-St. Paul metropolitan area, there is an abundance of potential community resources. By January of 1972, resources available to District 281 staff through the community affairs office numbered approximately 700. All resources in the program are scheduled through the community affairs office. At the beginning of each school year and again at the start of the second semester, each staff member is provided with a list of the community resources on file. This list is broken down into 14 major categories and further sub-divided into individual specialities. The figure given above of 700 resources on file is not an accurate indication of the actual number of resource categories available to the staff. For example, General Mills is listed as one resource but the resource possibilities are over 100. We also have one resource who has traveled extensively in 60 countries. Many individuals can give presentations on not only their occupation but on their avocational interests.

(over)

When a teacher wants to use our services, he or she either calls our office or fills out a resource person request form and provides us with the type of resource desired, the date, the time, curriculum area, subject matter to be discussed, and the number of students. The community affairs secretary then selects a resource from the files and makes the phone contact. After the verbal commitment has been made, a written confirmation is sent to the resource person, teacher, and principal. When a teacher requests a resource we do not have on file, we attempt to locate this resource or a satisfactory substitute. Prior to the resource person's appearance in the classroom, the teacher is asked to contact the resource and provide him with background information. Both the teacher and the resource person are asked to complete an evaluation form and return it to the community affairs office. After the resource has been in the classroom, the community affairs secretary sends a thank you letter. At the elementary level, the teacher also may have her students send thank you notes.

In addition to scheduling resources for individual teachers, the community affairs office assists school departments in organizing career day programs, mini courses, and special interest seminars.

The community affairs coordinator schedules field trips for teachers and basically the same procedure is followed as in scheduling of resource persons. The community affairs secretary makes all of the arrangements at the field trip site and also arranges either district or private carrier transportation. A field trip handbook, which lists and describes approximately 300 field trip sites as well as giving guidelines and procedural information to make field trip scheduling as convenient as possible for the teachers, has just been completed.

(2.) While a formal speakers' bureau made up of District 281 staff members is still a goal of the community affairs coordinator we do fill requests for speakers as they come into our office from local organizations.

(3.) A pilot Community School Program is being implemented this year. In this program we are attempting to consolidate several community services under the umbrella of the community affairs office. Coordinating the avocational and adult basic education program, scheduling of district facilities for the 29 schools in the district, establishing channels of communication with the community through a Community School Council, and meeting regularly with the park and recreation directors and other agency directors are all part of the responsibility of the community affairs office in coordination of the Community School Program.

(4.) At the present time we have no formal career exploration program. However, we do assist individual students who have indicated an interest in a career exploration experience. During school year 1972-73, we are planning to develop a pilot Career Exploration Program in one or two schools.

CV:cjm Carroll Vomhof began as community affairs coordinator August 1, 1970.

Independent School District 281 Robbinsdale Area Schools

July -- 1972

DISTRICT 281 COMMUNITY RESOURCE UTILIZATION PROGRAMS 1972-73

RESOURCE PERSONS *

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I. The Arts....................1

A. Arts and Crafts
B. Music and Dance
C. Theater Arts

* II. Business and Industry....................2

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"Request for Resource Person" -- sample form....................13

* This is a list of topics on which resource persons can be scheduled to speak. Arrangements are made through the community education office, Carroll Vomhof, director.

DISTRICT 281 COMMUNITY RESOURCE UTILIZATION PROGRAM 1972-73

RESOURCE PERSONS

I. THE ARTS

A. Arts and Crafts

- Antiquing
- Artist (fee)
- Beadwork/Indian (fee)
- Ceramics
- China Painting
- Corsage Making
- Creative Stitchery
- Crewel Embroidering
- Crocheting
- Decorations (Holiday)
- Decoupage (Purses, etc.)
- Dress Designing
- Electronic Flame Art
- Embroidering
- Felt Work
- Flower Arranging
- Gift Wrapping
- Graphic Art
- Handicrafts
- History of Art
- Jewelry Making
- Knitting
- Leather Carving
- Macrame
- Model Building
- Modeling Clay
- Needlepoint
- Painting
- Pottery Making
- Print Making
- Quilting
- Rosemalling (Painting)
- Rug Work (Hooked, Latch, etc.)
- Sculptic Art (Light)
- Sewing (Lingerie, Knits, Tailoring)
- Spinning - Weavers' Guild
- Textile Design
- Ukrainian Egg Coloring
- Whittling
- Wood Carving

B. Music and Dance

- Banjo
- Bassoon
- Composer (fee)
- Dancing (Creative, Folk, Polynesian; Costumes, Instruments)
- Electronic Music
- Guitar
- Handbells Choir
- Harmonica
- Harpguitar
- Mandolin
- Music Appreciation (Chamber, Concert, Opera, Orchestra)
- Music Lyrics
- Music Therapy
- Organ Music
- Piano
- Singing
- Tour, U.S.S.R. (University of Minnesota Band)
- Trumpet
- Tuba
- Violin Records

C. Theater Arts

- Acting
- Columnist
- Comparative Literature
- Costuming
- Creative Dramatics
- Creative Writing
- Directing
- Dramatic Presentations
- Educational Theater
- Film Appreciation and History
- Lighting, Producing, Staging Plays
- Oral Interpretation
- Play Reading (Professional)
- Playwright (fee)
- Poet and Poetry
- Publicity-Promotion
- Puppets
- Reader's Theater
- Scene Design
- Story Telling

I. THE ARTS (Continued)

C. Theater Arts

Theater Involvement
Theater Photography
Theater Training and Appreciation
Television Commercial Acting
Urban Arts

II. BUSINESS AND INDUSTRY

Administrative Management
Advertising (All Media)
Advertising and Promotional Truths
Agricultural Exports
Apartment Dwellings
Architecture
Big Business
Business in Education (The Role of)
Business and Public Interest
Business and Today's Life Styles
Business Relations
Business World -- Speakers' Bureau
College vs. Trade Schools
Commercial Accounts Receivable Financing
Commercial Banking
Commercial Law
Community Helpers
Computer Industry
Construction Business
Consumer Credit
Consumerism
Consumer Relations
Corporate Public Affairs
Corporate Social Responsibilities
Corporation (Private) and Its Role
Credit
Data Processing
Diesel Mechanics
Dry Cleaning Business
Economics--General Business
Electronics
Employment in Business and Industry
Financial Reporting
Financing
Franchise System
Free Enterprise System
Future of Administrative Manager
Future Shock of Salesmanship
Future Smaller Business in Bigger Economy
Graphic Arts Industry
Hotel Business
How a Business Functions
Industrial Safety
Industry and Education
Installment Sales Contract Financing
Insurance (All Types)
Inventory and Machine Equipment Financing
Labor Relations
Machine Tools Retailing Business
Management (Small Business, Retail)
Manufacturing
Marketing
Mining and Processing
Minneapolis City Government Workers
Minorities in Business
Mobile Homes
Motivating the Office Worker
National Secretaries' Association
News Media
Newspaper Circulation
*Northern States Power Programs
*Northwestern Bell Telephone Programs
Organizations (Types of)
Parks and Recreation
Personal Money Management
Petroleum Industry
Printing (Manufacturing and Sales)
Publications (Editing)
Public Relations
Quality Control
Sales
Service Industry
Small Business Relates
Stockbrokers
Taxes
The American Secretary
The First Lady in Business
Typography
Unions (Management and Labor)
Upholstering Business
Woodworking Industry

(Also see: Occupational Information (Careers), Section VIII, page 6, for additional business and industry resource requests.

III. GOVERNMENT AND COMMUNITY

American Friends Service Committee
American Red Cross
Atomic Energy Commission (Assemblies)
Automation in Government
Business and Prof. Women's Club
Chamber of Commerce
City Planner
Civic Center (The New)
Civil Defense
Civil Service (Postal Services)
Community Affairs and Relations
Community and Its Problems
Community Planning
Comprehensive Planning
Consumer Protection
Council (City)
County Engineer
Court Services
Customs/Trade Relations
Defense Work (Good or Bad)
Desegregation of Schools
Documents (Government)
Draft
F.B.I.
Federal Labor Legislation
Fire Department
Football Stadiums
General Government
Government (Municipalities)
Hennepin County Court Services
Hennepin County Crime Detection Labs.
Hennepin County League of Municipalities
Hennepin County Surveyors Office
Highway Div., Operations and Programs
Hospital (Volunteers)
Housing and Redevelopment
Humane Society
Judicial Services
Jury System
Landscape Design
Law Enforcement
Legal Aid Society
Legal Services
Legislative Process
Library Services
Local Government (City Council)
Manpower Development and Training
Mass Transit
Metropolitan Council/Twin Cities Area
Midwest Federal Building
News Photography (Government)
Nursing Homes
Photography Planning (Government)
Pilot City (Home for the Elderly)
Police Department
Political Process
Postman
Probation Services
Property Taxes and Elections
Public Budgets and Finance
Railroads
Scouting--Boy Scouts of America
Secret Service
Shopping Centers
Social Planning
Solid Waste Disposal
State Department of Health
The Greater Mpls. Chamber of Commerce
Traffic (Signs, Speeds, Safety, Volume)
Urban Coalition
Urban Planning
Urban Renewal
U. S. Food and Drug Administration
Veterans Services
V.I.S.T.A. Volunteers
Voluntary Associations (Problem Solving)
Voting
Workhouse, Mpls.
Y.M.C.A.

WELFARE DEPARTMENT SERVICES:

Adoptions
AFDC (Aid to Families with Dependent Children)
Adult Services
Child Day Care
Protective Services (Child Abuse)
Public Welfare
Trends in Welfare Finances
Family Services to Non-poor
Welfare Fraud
Cost-cutting in Public Assistance
Special Services -- Senior Citizens, Recreation Programs, Physically Disabled
Pilot City -- Elderly

IV. HEALTH

Abortion (Anti and Pro)
Cancer
Chiropractor
Dental Hygienist
Dentists
Dietary Programs
Diets
First Aid
Food Additive Dangers
Grooming
Handicapped
Health Care
Health Foods
Health and Hospitals
Heart
Illness (The Meaning of an Illness to the Family)
Inhalation Therapist
Laboratory Science
Mental Health
Mental Retardation
Motivational Psychology
Nursing
Nutrition
Nutritional Raw Foods
Optician
Orthopedic Surgeon
Physical Fitness
Physical Rehabilitation
Physicians
Psychologist
Rescue Work, First Aid
Sex Education
Smoking (Dangers of)
State Department of Health
Teeth (Preventative Dentistry)
U. S. Food and Drug Administration
Venereal Disease
Yoga

V. HISTORY AND CURRENT EVENTS

Afro-American History
Colonial System (Blacks)
Cosmetology (Past History of)
Dolls for Democracy (Washington, Carver, Lincoln, Roosevelt, St. Francis of Assisi, Ralph Burnoeh)
Flags (Heritage of Our Nation -- fee)
History and Culture Surrounding Wines
History; Land Development in United States and Minnesota
History; Red China
India Culture
Indian Culture
Indian Subcontinent (History, Geography)
Israel Cultural Contributions in Our Judeo-Christian Heritage
Legal History
Mesoamerica (Cultural Past of)
Minnesota (Northern Development)
Minority History
Renaissance and Reformation/World Religions
Robbinsdale Early History
Transportation (Early Minnesota)

(Also see: Social Concerns, Section XI.)

VI. INTERNATIONAL

Careers
Coins
Foreign Language Careers
Foreign Trade and Investment
German Lessons
International Marketing
International Relations
International Trade
International Travel
United Nations
U.S./Canadian Business Relationships
U.S./U.S.S.R. Business Relationships
World Citizenship (Mpls. Declaration of)

(Also see: Study of United States and Foreign Countries, Section XIII.)

VII. MISCELLANEOUS

- Airplanes (Radio Controlled)
- Antiques
- Aqua-jesters Clowns
- Architectural History/Arts
- Artificial Limbs and Orthopedic Braces
- Assistance Corps (Medical Missions)
- Audio-Visual and Equipment Usage
- Audubon Society
- Auto Repair (Body and Minor Engine)
- Aviation
- Bird Watching
- Braille
- Butterflies Collections
- Butter Making
- Cake Decorating
- Camp Directing
- Censorship in News
- Coin Collecting
- Color Fabrics
- Color Theory and Perception
- Communications
- Computers in Your Life
- Cosmetology
- Counterfeit Money
- Culinary Field
- Deaf
- Diets
- Draft
- Fashion Design
- Fashion Merchandising
- Film Appreciation Class
- Fire Prevention
- First Aid
- Flags Presentation (fee)
- Flower Arranging
- Flying
- Food Manufacturing
- Food Photography
- Food Sciences
- Fossils Collection
- Furniture Refinishing
- Gardening
- Generation Gap (Is There Really One?)
- Gift Wrapping
- Girls' Rights--Competing Teams
- Gourmet Cooking
- Graphic Arts
- Graphoanalysis
- Grooming
- Helen Keller Story (fee)
- Home Fire Safety
- Home Furnishing, Decorating
- Houseware Furnishings
- I'm OK, You're OK
- Imports
- Imprisonment of World War II (Former POW)
- Income Tax
- International Foods
- Interior Design
- Journalism
- Landscape Architecture
- Lead Free Gasoline
- Listening (The Art of)
- Magic Shows (fee)
- Math
- Minerals Collection
- Modeling (Self-improvement)
- Motivation
- Motivational Psychology
- Mountain Climbing
- Newspaper Media
- Old Radio Programs
- Outward Bound
- Personal Self-improvement and Development/Modeling
- Photography
- Presidents' Wives (Complete Library)
- Printing (Background and Tools Used)
- Prison Life
- Public Speaking
- Puppetry
- Repairs (Small Appliances)
- Rescue
- Rocks
- Sail Boat Building
- Sail Making
- Security Guard Dogs
- Seeds to Cereal (History of Grain)
- Setting Personal Goals and Attaining Them
- Space/Future
- Speech (The Art of Communicating)
- Stamp Collecting
- Telephoney (Teen Age Interest in the Telephone)
- Traffic Safety
- War and Protest
- Weather Reporting
- Wedding-Bridal Consultants
- Weight Control
- Woodworking
- World Peace (In Southeast Asia)
- Yoga

VIII. OCCUPATIONAL INFORMATION (CAREERS)

Accounting
Advertising
Aero-Space Engineer
Airline Stewardess
Air Transportation
Animal Research
Anoka Area Technical School
Apartment Management
Archeologist
Architect
Attorney
Automobile Dealership
Aviation
Baker
Banking
Biochemist
Biomedical Engineering
Building Trades
Career Guidance and Planning
Cartoonist (Video-taped)
Certified Public Accountant
Chef
Chemistry (Careers in)
Civil Engineering
Civil Service
Clinical Laboratory
Clothing Market --New York
College (Guidance) U. of M.
College (Guidance) Jr. College
Commerce (U. S. Dept. of)
Communications (Government)
Computers (Real-time in Service)
Conservation Careers
Construction Careers
Court Reporting
Credit Manager
Data Processing
Dentistry Careers
Design Writing
Dietitian
Disc Jockey
Doctor
Draft Counselor
Draftsman
Dry Cleaning
Editor
Electrical Engineering
Electronics
Employment Agency Careers
Employment Interviewing
Engineering
Farmer
Fashion Designer
Fashion Merchandising
F. B. I. Careers
Fire Inspector
Florists
Flour Milling
Flour Production Manager
Food Industry
Graphic Arts Field
Health Careers
Home Economist
Hospital Administrator
Industrial Education
Industrial Sales Careers
Inhalation Therapist
Insurance (Benefits)
Insurance (Careers)
Interior Decorating and Designing
International Trade Careers
International Foreign Language Careers
Interviewing Techniques
Job Seeking Skills
Judge
Laboratory Medicine
Landscape Architect
Land Surveying
Law Enforcement
Lawyers
Loan Adminstrator
Management, Retail
Manufacturing Careers
Manufacturing Procedures
Marketing
Marketing Research
Marketing (Sales and Premium End of the Business)
Meat Manager
Mechanical Engineering
Mechanics
Medical Field
Medical Technicians
Military Service

VIII. OCCUPATIONAL INFORMATION (CAREERS)

- Mining Careers
- Ministers
- Modeling and Finishing School
- Music Administration
- Neurologist
- Newscaster
- News Media
- News Photography
- Nursing
- Occupational Education
- Occupational Therapist
- Oil Company
- Optical-Microscope Sales
- Optician (Contact Lenses)
- Orthopedic Surgeon
- Paramedical Professions
- Payroll Supervisor
- Payroll Systems Analyst
- Personnel Work
- Pharmacist
- Pharmacy Sales
- Photographer
- Photographic Industry Training
- Pilot
- Podiatrist
- Postman
- Printing
- Prosthetist (Orthopedic Braces and Artifical Limbs)
- Programmers
- Psychiatry
- Public Accounting
- Public Relations
- Purchasing
- Quality Control Prod. Inspection
- Radio
- Railroads
- Real Estate
- Reporter
- Restaurant Management
- Safety Patrol
- Sales, Retail
- Sales Training
- Scientific Careers
- Scout Executive
- Secretarial Field
- Semi-truck Driver
- Social Workers
- Soil Conservationist
- Sports Writer
- Stockbroker
- Taxonomist
- Telephone Company
- Television
- Travel Agency
- Treatment Supervisor
- Upholsterer
- Upholstering and Cleaning Business
- U. S. Marshall's Service
- Veterinarian
- Vocational Technical School
- Vocational Training
- Writer
- X-Ray Technologist

IX. RELIGIONS AND CULTURES

- Afro-American History
- Black Americans
- Cameroon Africa (Culture or Life)
- Catholicism
- Christian Education (Home, School, Church)
- Christianity in India
- Church Music (Modern Trends)
- Comparative Religions
- Cookery (Foreign Countries)
- Indian Culture
- Israel Cultural (Contributions)
- Jesus Christ People
- Jewish Culture
- Latter Day Saints
- Mennonites
- Migrant Farm Workers
- Mormonism
- Ozarks (Missouri Culture)
- Protestantism
- Religions of the Orient
- Religions of the World

X. SCIENCE

- Amphibians
- Animal Research
- Antarctica
- Archeology
- Astrology
- Astronomy
- Audubon Society
- Bacteriology
- Bees and Insects
- Behavior (Large Animals)
- Biochemistry
- Biology
- Biomedical Engineering
- Bird Watching
- Butterflies
- Conservation (Land and Soil)
- Ecology (Arctic)
- Electricity
- Energy
- Entomology (Insects)
- Environmental Concerns
- Fish
- Food Sciences
- Fossils, Artifacts
- Genealogy
- Graphoanalysis
- Heart
- Horticulture
- Human Development/Potential
- Insect Anatomy
- Insecticides
- Insects
- Laboratory Science
- Meteorologist
- Minerals
- Organic Gardening
- Origin of Life
- Pace Maker - Medtronics
- Polar Science
- Political Science
- Radiation
- Reptiles
- Rocks
- Science (Scientific Research)
- Seismograph
- Space Research
- Weather Reporting
- Zoology

XI. SOCIAL CONCERNS

- Abortion (Anti and Pro)
- Adoption
- Alcoholism
- Alcohol (Traffic Safety Countermeasures)
- Alienation
- Behavior
- Birth Control
- Campus Unrest
- Child Abuse
- Coalition
- Counseling (Marriage, etc.)
- Crime
- Crime Rehabilitation
- Criminal Investigation
- Dating
- Death (Problems of)
- Desegregation of Mpls. Schools
- Discrimination
- Drug Abuse
- Drug Legislature
- Ecology/Environmental Concerns
- Emma Willard Task Force on Education
- Equal Employment Opportunity in Industry
- Equal Rights
- Family Life Educator (Child Services)
- Family Social Science
- Former Drug Addicts
- Jails
- Juvenile Court
- Juvenile Delinquency
- Juvenile Rights
- Learning Disabilities (Children with)
- M.A.R.C. (Mpls. Ass'n. Retarded Children)
- Marriage and Family Living
- M.E.C.C.A. (Minnesota Environmental Control Citizens Association)
- Mental Retardation
- N.O.W. (National Organization of Women)
- Patriarchal Family Living
- Peace Corps
- Planned Parenthood
- Pollution
- Poverty
- Racism
- Sex Education
- Smoking

XI. SOCIAL CONCERNS (Continued)

Suicide
Teenage Pregnacy
Unwed Mother
Unwed Parents
Venereal Disease
Violence
*Welfare Department
Womens' Liberation
Y.E.S. (Youth Emergency Service)
Z.P.G. (Zero Population Growth)

* (Also see: Government and Community, Section III.)

XII. SPORTS

Archery (Video-taped)
Baseball
Big Game Hunting
Bowling
Camping
Canoe Trips
Dog Training
Fishing
Football
Hockey (North Stars)
Skiing
Writer of Sports Events

*XIII. STUDY OF UNITED STATES AND FOREIGN COUNTRIES

Afghanistan
Africa
Alaska
Appalachia (Pa., Ohio)
Argentina
Australia
Austria
Belgium
Bolivia
Bavaria
Brazil
British Columbia
British Isles
Cambodia
Canada
Caribbean Islands
Central America
Ceylon
Chili
China (Traditionally, Before Communism)
Columbia
Cuba
Cyprus
Czechoslovakia
Denmark
England
Egypt
Equador
Europe
Near East Countries
Finland
France
Germany
Greece
Guatamala
Haiti
Hawaii
Holland
Holy Land
Hong Kong
Hungary
Iceland
India
Indonesia
Iran
Ireland
Israel
Italy
Jamaica
Japan
Jordon
Kingdom of Swat
Korea
Lapland
Latin America
Lebanon
Liechtenstein
London
Luxemburg
Malasia
Mallorca
Manila
Mexico
Middle East
Missouri (Ozarks)
Monaco
Morocco
Nepal
Netherlands
Newfoundland
New Zealand

XIII. STUDY OF UNITED STATES AND FOREIGN COUNTRIES (Continued)

Nigeria
Northern Europe
Norway
Orient
Pakistan (West)
Panama
Paraguay
Paris
Peru
Portugal
Red China
Rhodes
Russia
Scandinavia
Scandinavian Countries
Scotland
Singapore
South America
South Pacific
Soviet Union
Spain
Surinam
Sweden
Swedish (Royal) Consulate
General Speakers' Bureau:
  a. Culture and Science
  b. Economics
  c. Education
  d. Environment Protection
  e. General (Policy, Domestic, Foreign, History, Social System)
  f. Law
  g. Mass Media
  h. Politics
  i. Social and Domestic Policy
Switzerland
Syria
Taiwan
Thailand
Trinidad
Turkey
United Arab Republic
Uraguay
United States (No. America Parks)
Venezuela
Viet Nam
Wales
West Indies
Yugoslovia

(*) ($10.00 fee charged for foreign students that are obtained through the University of Minnesota.)

XIV. HOBBIES AND COLLECTIONS

Antiques
Audubon Society
Big Game Hunting
Bird Watching
Butterfly Collection
Butter Making
Coin Collection
Electronics
Film Making
Flags
Flower Arranging
Flying
Fossil Collection
Gardening
Hobbies (Importance of)
Insect Collecting
Insect Preservation
Minerals
Photography
Radio (Old Programs)
Rock Collection
Sail Making
Stamps
Travel
Tropical Fish

(*) -- Page two

NORTHERN STATES POWER COMPANY PROGRAMS

- Ecology--Wise Use of Energy (Environmental Department)
- Kitchen Planning (Home Economics Department)
- Lighting (Home Economics Department)
- Wise Use of Appliances and Electricity (Home Economics Department)

(Additional programs such as Electonic Range, etc., will be made available upon special request.)

NORTHWESTERN BELL TELEPHONE COMPANY PROGRAMS (All Grade Levels)

- "A Cure for Crank Calls"
- "For Humans Only"
- "Laser..................The Light Fantastic"
- "Red or Green...............You Decide"
- "Slippery Wire and Other Telephone Stuff" (Humorous)
- "The Mini-Revolution"
- "There've Been Some Changes Made"
- "The Tomorrow Machine"
- "20th Century Pony Express"
- "Your Personal Computer, Who Cares?"

(The above "Town Talkers" programs can be arranged by calling the Community Education Office, extension 218 or 235.)

NORTHWESTERN BELL TELEPHONE COMPANY PROGRAMS (High School Students Only)

- Slide Presentation -- "Career Deveopment"

This presentation is geared to the tenth- and eleventh-graders and can be used in an auditorium setting also. It is designed to make the student think ahead about the variety of jobs available in industry. This presentation takes about thirty minutes with a question and answer period to follow if you wish.

(*) -- Page two

NORTHWESTERN BELL TELEPHONE COMPANY PROGRAMS (High School Students Only)

- Slide Presentation --"Job Opportunities"

This presentation is geared to the seniors in high school and can be used in an auditorium setting. It is designed to make students aware of the many different jobs available in industry. The program is approached in this way, "When I tell people I work for the telephone company, they think I must be an operator. But let's see many supportive jobs there are to the long distance operator." The slide presentation lasts about 30 minutes.

- Mock Interview

The resource person will ask to use a student as an interviewee and will actually conduct an interview. Following the interview there will be a discussion period which will include the entire class. At this time, the resource person will point out why an interviewer would ask certain questions and why it is important that proper information be given.

- Talk -- "The Hunter's Guide: Tips To Help You Get a Job"

This is a 20-minute talk on how to apply for a job. Along with the speech goes a flip chart featuring a dog dressed as a hunter going through the different phases of applying for a job.

- Brochures

"How To Apply for a Job" --(These will be brought along with speaker at your request.) "June 1970 High School Graduates on the Job at the Telephone Company"

- Tours

Tours can be arranged through the Independent School District 281 Community Education Office, extension 235 or 218, for groups of 30-50 to visit the premises at 224 South 5th Street. They will be prepared to feature jobs that would be of interest to your particular class. Time will be allowed for questions and answers to follow.

SAMPLE REQUEST FORM

Independent School District 281 Robbinsdale Area Schools

REQUEST FOR RESOURCE PERSON

Teacher (s)____

Home phone number where resource person could contact you, if unable to reach you at school building________________ During Hours__________

School________________________________ Grade __________

Curriculum Area _________________________ Number of Students ______

Subject matter to be covered by resource person________________________

____

If you are requesting a specific person, give his name____________________

Please list a second and third choice of dates and times in case the resource person is not available on first date or time requested.

Date (s) Requested:	________ (First Choice)	________ (Second Choice)	________ (Third Choice)
Time (s) of Day:	________ (First Choice)	________ (Second Choice)	________ (Third Choice)

CV:cjm
September -- 1972

YOU MAY OBTAIN COPIES OF THE ABOVE BLUE REQUEST FORM FROM THE PRINCIPAL'S OFFICE.

If you should have an interest area not listed on our resource category roster, please contact the Community Education Office, extension 218 and we will be most happy to do some additional searching and find this resource person for you.

CV:cjm
Revised -- July 1972

Independent School District 281 Robbinsdale Area Schools

Revised, July, 1972

TEACHERS' GUIDELINES FOR USING COMMUNITY RESOURCES THROUGH THE COMMUNITY EDUCATION OFFICE

I. REQUESTING A RESOURCE OR ASKING FOR INFORMATION REGARDING A RESOURCE

. . . If you use the services of the community education office, all arrangements for resource persons and field trips will be made by the community education office. Requests must be submitted at least two weeks prior to the activity.

. . . If a particular resource is needed in an area not included on the blue District 281 Community Resource Utilization Program roster, a request form should be submitted or a call placed to the community education office, and every attempt will be made to locate the resource requested.

RESOURCE PERSONS

a. When you call the community education office, we will ask for your curriculum area, for the specific type of resource wanted, and the date and hours you are requesting the resource. For those teachers who would prefer to submit a written request, blue request forms are provided in each principal's office.

b. If we have this type of resource available, we will attempt to notify you within five days from the time your request was received in the community education office.

c. The community education office will contact the resource by phone and if he or she is available, the office will send out a confirmation to the (1) teacher, (2) resource, and (3) principal.

d. The phone number of the resource will be listed on the confirmation. The teacher is to call the resource person and provide him or her with as much information about his class as possible. This will help the resource person plan his presentation.

e. In case of a cancellation, if time permits, we will try to find a substitute. You will be notified immediately of any cancellations or substitutions. If the resource calls you directly to cancel, please inform the community education office immediately.

II. PREPARING FOR THE RESOURCE'S VISIT

. . . Acquaint the class with the resource's name and make sure your students are aware of the purpose of the visit and what benefits might be gained by it.

. . . Have the class prepare thoughtful questions to ask the resource person.

. . . Review rules of conduct and courtesy when hosting a guest resource person.

. . . It is the teacher's responsibility to arrange for any audio-visual equipment that is requested by the resource person. Check the confirmation sheet and make sure all required equipment is available and in working order when the resource arrives.

. . . Decide who will meet the resource in the principal's office and escort him to the classroom. This student should be in the office several minutes before the expected arrival. Instructions in proper introduction should be given.

. . . If the resource person or teacher cancels the presentation or reschedules it for another date, and it has not gone through the community education office, the teacher should notify the community education office of the change. (This avoids the embarrasement of sending a routine thank you note from the community education office to the resource, only to find out at a later date that the appointment was not kept for some reason.)

III. ARRIVAL OF RESOURCE AND PRESENTATION

. . . Resource speakers are instructed to go directly to the principal's office when they arrive in the building.

. . . Every resource person is provided with a card of introduction to be used by the individual who is making the introduction. If the resource person does not give you the card, please ask him for it.

. . . The teacher should be in attendance during the entire presentation. The resource person is not responsible for classroom management.

. . . The amount of time the resource person has for his presentation should be given to him when you call him. This will allow him to set his own time schedule.

V. FOLLOW-UP

. . . After the presentation, have the student who introduced the speaker thank him for his presentation. Do not allow the class to leave until this has been done.

. . . If the resource person's schedule permits, an informal visit over a cup of coffee with you, the principal, and other teachers is always appreciated.

. . . Teachers should inform the community education office when they have suggestions or criticisms to make about the resource person's presentation. This is the only way we have of knowing what changes are needed. So, please complete the green evaluation form immediately after the presentation and forward it to the community education office.

VI. PREPARING FOR A FIELD TRIP

. . . Follow the guidelines listed in the field trip handbook for scheduling field trips through the community education office.

FOR FURTHER INFORMATION, PLEASE CONTACT:

Mrs. Carolyn Moberg

Community Education Secretary

533-2781

Extension 235

CV:cjm

MATH CAREER DAY PROGRAM - DECEMBER 16, 1970

TIME	ROOM 383	ROOM 384	ROOM 385	ROOM 386	ROOM 387	ROOM 388
8:00-8:40 MODS 1 and 2	Arch. Tech. Mr. John Kosmos No. Henn. St. Jr. Col. (2 Yr. Coll. Prog.)	Pers. Tax Consultant (Non-Coll. Opport.) Mr. Gordon Bryan H & R Block	The Liberated Woman in Industry Mrs. Darcy Truax Honeywell Corporation	Highway Eng. & Tech. Coll. & Non-Coll. Oppor Mr. Mike Casey Minn. St. High. Dept.	Banking (General) Coll. & Non-Coll. Oppor Mr. Ray Shemanek Northwest Bank Corp.	Navigation College opportunities Mr. Art Hinke North Central Airlines
8:40- 9:20 MODS 3 and 4	Arch. Tech. (2 Yr. Coll. Prog.) Mr. John Kosmos No. Henn. St. Jr. Col.	Pers. Tax Consultant (Non-Coll. Opport.) Mr. Gordon Bryan H & R Block	The Liberated Woman in Industry Mrs. Darcy Truax Honeywell Corporation	Highway Eng. & Tech. Coll. & Non-Coll. Oppor Mr. Mike Casey Minn. St. High. Dept.	Banking (General) Coll. & Non-Coll. Oppor. Mr. Ray Shemanek Northwest Bank Corp.	Navigation College opportunities Mr. Art Hinke North Central Airlines
9:20-10:00 MODS 5 and 6	Certified Pbl. Acc't. College Opportunities Mr. Jerome Lee John A. Knutson & Co.	Elec. Design & Drafting Coll. & Non-Coll. Oppor. Mr. Jim Lang Mpls. Chap. of N.E.C.A.	Actuarial Science College Opportunities Mr. Dick Moody Hewitt Associates	Surveyor Non-Coll. Opportunities Mr. Dickman Knutson McCumbs, Knutson Assoc.	Computer Programmer Coll. & Non-Coll. Oppor Mr. John Carstens Control Data Corp.	Bookkeeping Non-College Opportunity Miss Janet Silberstein Appliance Parts, Inc.
10:00-10:40 MODS 7 and 8	Certified Pbl. Acc't. College Opportunities Mr. Jerome Lee John A. Knutson & Co.	Elec. Design & Drafting Coll. & Non-Coll. Oppor. Mr. Jim Lang	Actuarial Science College Opportunities Mr. Dick Moody Hewitt Associates	Surveyor Non-Coll. Opportunities Mr. Dickman Knutson McCumbs, Knutson Assoc.	Computer Programmer Coll. & Non-Coll. Oppor Mr. John Carstens Control Data Corp.	Bookkeeping Non-College Opportunity Miss Janet Silberstein Appliance Parts, Inc.
LUNCH	LUNCH	LUNCH	LUNCH	LUNCH	LUNCH	LUNCH
12:00-12:40 MODS 13 and 14	Small Business Owner Coll. & Non-Coll. Op. Mr. Bob Brooks Building Block	Math Teacher College Opportunities Mr. Harlan Hewitt No. Henn. St. Jr. Coll.	Tax Consultant College Opportunities Mr. Alan Johnson Touche, Ross & Co.	Banking Non-Coll. Opportunities Mrs. Nancy Berg 1st Nat'l. Bank-Mpls.	Weather Bureau College Opportunities Mr. Joe Strub Nat'l. Wea. Svc. Forec.	Stock Broker College Opportunity Mr. Don Gilbert Dain, Kalman & Quail
12:40- 1:20 MODS 15 and 16	Small Business Owner Coll. & Non-Coll. Op. Mr. Bob Brooks Building Block	Math Teacher College Opportunities Mr. Harlan Hewitt No. Henn. St. Jr. Coll.	Tax Consultant College Opportunity Mr. Alan Johnson Touche, Ross & Co.	Banking Non-Coll.Opportunities Mrs. Nancy Berg 1st Nat'l. Bank-Mpls.	Weather Bureau College Opportunities Mr. Joe Strub Nat'l. Wea. Svc. Forec.	Stock Broker College Opportunity Mr. Don Gilbert Dain, Kalman & Quail
1:20-2:00 MODS 17 and 18	Architecture College Opportunities Mr. Gene Green Bissel, Blair & Green	Air Traffic Control College Opportunities Mr. Verne Cummings Crystal Airport	Travelling Salesman Coll. & Non-Coll. Oppor. Mr. Ray Stockman Brown & Bigelow	Banking College Opportunities Mr. Bill McKnight 1st Nat'l. of Mpls.		Stock Broker Non-Coll. Opportunities Mr. Don Gilbert Dain, Kalman & Quail
2:00-2:40 MODS 19 and 20	Architecture College Opportunities Mr. Gene Green Bissel, Blair & Green	Air Traffic Control College Opportunities Mr. Verne Cummings Crystal Airport	Travelling Salesman Coll. & Non-Coll. Oppor. Mr. Ray Stockman Brown & Bigelow	Banking College Opportunities Mr. Bill McKnight 1st Nat'l. of Mpls.		Stock Broker Non-Coll. Opportunities Mr. Don Gilbert Dain, Kalman & Quail

APPENDIX VI
ENVIRONMENTAL CAREERS PROGRAM

CAREERS PROJECT

A Cooperative Project
in Career Education

Exemplary Vocational
Education Program
Based on Environmental
Studies K - 14

Funded by
United States Office of Education
Under Provisions of Part D
of the Vocational
Education Amendments
of 1968

Co-sponsored by
Minnesota Environmental Sciences
Foundation, Inc.
5400 Glenwood Avenue
Minneapolis, Minnesota 55422
and
Robbinsdale Area Schools
Independent School District 281
4148 Winnetka Avenue North
New Hope, Minnesota 55427

A Cooperative Venture with an Environmental Focus

ORIGIN OF THE PROJECT

The Careers Project is a joint venture in career education undertaken by the Minnesota Environmental Sciences Foundation, Inc. and Independent School District 281, Robbinsdale Area Schools. Using an environmental focus to establish career education in grades K-14, the Careers Project was designed to be an exemplary program. Both organizations, school district and foundation, provide a co-directorship to oversee planning and evaluation in agreement with the objectives of Part D, Education Amendments of 1968.

The Robbinsdale Area School District is located in the western suburban area of Minneapolis, Minnesota, and is comprised of the entire municipalities of Robbinsdale, Crystal, and New Hope, and parts of Golden Valley, Plymouth, Brooklyn Center, and Brooklyn Park. While many vocational programs were successful in the Robbinsdale Area Schools, no formal systematized program of career education was in operation.

Student and community needs were determined in the following areas:

1. Elementary students needed to be exposed to a positive attitude development toward the working world.
2. Occupational exploration needed to be available to junior high school students.
3. Complete career information needed to be available in senior high schools for teachers and students.
4. Work experience cooperative coordinators needed to be utilized by the entire school system for their expertise in special fields.
5. Dropouts, who are in most desperate need for career counseling, needed to be provided opportunity for information or assistance in job application skills.

The major goals of the Careers Project are

1. To influence positive attitudinal changes as evidenced by behavioral changes in students toward the environment.
2. To provide students with a background of experience and information leading to their career development.
3. To interface, when appropriate, environmental components with career development components.

Developing,

Building,

Exploring,

Learning

Positive Attitudes

toward

Careers

ELEMENTARY PROGRAM

Allows teachers of selected elementary schools to learn to relate career information and environmental attitudes in all appropriate areas of the curriculum.

Allows children in selected elementary schools to become familiar with a variety of occupations.

Draws upon all community resources, particularly those from the Minnesota Environmental Sciences Foundations, Inc. to make the Careers Project program vital and interesting.

IN-SERVICE

A five-day in-service workshop for 19 elementary teachers, K-6, from Pilgrim Lane and Sunny Hollow Elementary Schools, was held in August, 1971, prior to the school term. Teachers

- Were introduced to career education concepts.
- Discussed their respective environmental/career units.
- Had a free discussion on planning and operation.
- Experienced several situations in relation to "hands on" units.
- Went through an exercise and discussion of open classroom philosophy in terms of awareness of self-concept.

IMPLEMENTATION

A constant contact has been maintained by the curriculum in-service staff with all elementary project teachers offering encouragement, advice, and help in securing materials and services.

Monthly staff meetings have been held in each school for project staff teachers to continue support system and answer questions and concerns.

Help has been offered and accepted in making arrangements for field trips and guest speakers.

Project staff have accompanied class groups on field trips and special projects.

Three one-day in-service workshops have been held for the elementary project teachers with the following emphasis:

- Integrating career education in the regular elementary curriculum.
- One-day factory tour and employee/management contact for teachers followed by discussion concerning implications for elementary education.
- Review and self-evaluation by teachers with suggestions for next year's project.

Each teacher taught two environmental/career units by May 31, 1972.

EVALUATION

STUDENT

A pretest attitudinal survey was administered to all project students along with a control group. Post-tests will reflect change in attitudes responses compared to a control group over the same period of time.

TEACHER

An opinion survey was made of teachers associated with the project by the principals with reference to opinions about various aspects of the program and the desire to continue. The most revealing suggestion was that teachers who are added to the project should have complete information about the project's expectations and be voluntarily involved as project teachers.

An Assessment First... then a Specially Designed Program Related to Career Exploration

JUNIOR HIGH PROGRAM

Expands the students' knowledge of occupational opportunities.

Adds depth to students' ecological awareness in relation to academic areas and career opportunities in the community.

NEEDS ASSESSMENT

An assessment of Hosterman Junior High pupils' attitudes and information of careers has been accomplished. This assessment revealed areas of need for career information and career exploration.

PROGRAM DEVELOPMENT

A committee of 15 teachers involved in career unit writing teams headed by Miss Betty Neuwirth, guidance department counselor at Hosterman, met several times and prepared a proposal for implementing career education at Hosterman Junior High School. This career unit established a program that provides pupil potentials labs (a resource for all pupils to explore their interests in careers), a resource directory of instructors and community people who are knowledgeable in identified fields, and a para-professional aide to maintain and operate the directory and center.

Preparation for Beginning World of Manufacturing and World of Construction, courses in the junior high schools, was initiated by identifying four junior high industrial arts instructors who attended an instructor preparation workshop. Courses will begin in the fall of 1972.

Combining Attitudes and Information To Make a Sensible Career Choice

SENIOR HIGH PROGRAM

Maintains and provides information on educational patterns which are necessary and desirable for any occupation for students and teachers in a systematic fashion.

Provides vocational counseling and guidance information to all students with respect to their own interests, attitudes, and abilities.

Provides job availability information for those students who seek entry-level part-time or full-time occupations.

Provides work experience in actual on-the-job situations for appropriate needs of students, especially to define those occupations which would be related to preservation of the environment.

STAFF DEVELOPMENT ACTIVITIES

The Careers Project supports the full-time equivalent of one work experience coordinator. In effect all work coordinators are considered obligated to the success of this project. The coordinators in cooperation with the Careers Project staff have been involved in preparing a community business survey which will completely assess the business potential of the district. The survey will be carried on by mail and follow-up with contact of non-responders to insure complete coverage. The results of the survey will provide business information and occupational opportunities for coordinators, the Career Resource Center, and the Community Career Center.

Coordinators will operate as career development resource consultants to the entire district in their special area of experience.

RESOURCE CENTER

A Career Resource Center has been established at Armstrong Senior High School, where space has been provided, and a resource career consultant has been hired.

An attitude survey of all eleventh graders of Armstrong High School was developed and administered. The purpose was to determine pupil attitudes toward their own career information. A post-test survey indicated any shift in attitude or information.

Expanding the Role of the School into the Community

COMMUNITY CAREER CENTER PROGRAM

The Community Career Center's role is to further fulfill the schools' obligation to the community through a formal extension of its services into the community.

The function of the center is to provide dropouts and high school graduates or certificated adults with career and educational information.

PROGRESS AND EVALUATION

The Community Career Center has become established with the community as a resource for out-of-school youth and adults to secure career and educational information. News articles have appeared in local papers describing the center and its goals.

An advisory council, composed of a local commercial placement officer, junior college and vocational school placement people, district guidance director, work experience coordinator, and an employment securities officer, has met and will advise the community career center director.

An evening school for credit has been established which hires teachers, registers pupils, makes physical arrangements, keeps financial records, and keeps academic records. The first semester, 91 pupils enrolled in four courses with five teachers. The second semester, 112 pupils enrolled in six courses with eight teachers. Enrollment includes day school students and dropouts both from within and outside the district.

A dropout program has been initiated which enrolls up to four students each week for a total of six hours. The purpose is to introduce, polish, and practice job application skills.

A community survey to assess adult needs for career and educational information is being implemented. This survey will have implications for the Community Career Center.

A program has been initiated to place career information for adults in print in the local, weekly press on a continuing basis.

POST HIGH SCHOOL COORDINATION

The Area Vocational-Technical School, District 287, initiated an environmental control technician program course May 1, 1972. One careers project co-director is on the advisory committee to this course, consulting on curriculum, needs, placements, resources, etc. The other co-director is an advisor to that school as well as liaison between the vocational school and District 281.

CAREERS PROJECT STAFF

Dr. Cliff Helling, Co-director, District 281 Vocational Director

Barbara B. Clark, Co-director, Minnesota Environmental Sciences Foundation, Inc.

Donald Johansen, Project Coordinator

Donald Rex, Director, Community Career Center

Patricia Watkins, Curriculum In-service

Audrey Strandberg, Career Resource Consultant

Lynda Goodwin, Project Secretary

Robbinsdale Area Schools
Independent School District 281

Dr. Leroy E. Hood
Superintendent

serving the suburbs
of
Robbinsdale
Crystal
New Hope
Brooklyn Center
Brooklyn Park
Golden Valley
Plymouth

Minnesota Environmental Sciences
Foundation, Inc.

Richard J. Myshak
Executive Director

serving innovations
in education

throughout the

United States

The following story appeared on the District 281 School Page in the five Post newspapers (weekly publications for the North Minneapolis, northern suburban area) on May 18, 1972. Pictures accompanying the story were taken by Miss Pat Watkins of the Minnesota Environmental Sciences Foundation.

19 Teachers in Special Program Learn, Teach Career Development

By ROSEMARY JOHNSON

Fourth graders carefully surveyed Pilgrim Lane school playground.

Kindergartners measured, sawed, and hammered at a colorful spool table.

Second graders collected samples of wild seeds at the Highland Nature Center to take back to Sunny Hollow for study.

Fifth graders interviewed the Pilgrim Lane faculty about teaching and illustrated their reports with photographs.

How are these widely scattered activities related?

FEDERALLY-FUNDED PROGRAM

All are the result of ideas, materials, and units developed by the teachers during a career development-environmental science workshop sponsored as part of a careers project by the federal government through the Community Career Center and the Minnesota Environmental Sciences Foundation.

"NINETEEN TEACHERS FROM SUNNY HOLLOW and Pilgrim Lane elementary schools attended a five-day preschool workshop," Don Johansen, director of the federal project, explained, "as part of an exemplary program.

"The elementary phase of the careers project is intended to help teachers make youngsters aware of the world around them, including the world of work, and gain a positive attitude toward all work."

Many of the activities in the pilot program are integrated into the social studies, science, language arts, and other curriculum areas, rather than being done separately, Johansen said.

"We tried to help the teachers use career and environmental education as an emphasis for what their classes are already studying."

WORKSHOPS HELP TEACHERS

The workshop series began with the preschool session. It has also included 3 one-day sessions during the school year, with two more scheduled this spring.

Miss Kay Klein, fifth-grade teacher at Sunny Hollow, said, "We spent the first day of the workshop week making things for our rooms in a wood shop and getting acquainted with each other as well as with the tools."

AFTER MAKING THE SURVEYING EQUIPMENT (range poles and sighters) themselves, so they could help their classes do it later, the teachers went into a school yard to measure the ground. Using the data collected, they made contour maps.

Because of this experience, fourth graders in Pilgrim Lane school, under the direction of Mrs. Mary Jo Russ and Miss Doris Whittler, developed a contour map of their playground — after making their range poles and sighters in the school's woodworking shop.

Part of the fourth grade social studies curriculum includes helping students understand different kinds of maps, including contour ones, Mrs. Russ explained.

Teachers involved in the workshop are instructing youngsters in the two schools (Pilgrim Lane and Sunny Hollow) to use tools bought with funds from the program. Each school has a separate wood shop area developed with the assistance of Roy Seitz, district industrial arts coordinator. Children in all grade levels are using them, either for individual projects or to construct simple items needed for units in various areas.

MRS. PENNY DAEHLIN, second grade teacher at Sunny Hollow teaches the use of the tools during a weekly special session involving all second graders. Although the children don't make any special project, she explained, each does use all of the tools in some way.

Another preschool workshop day included surveying the community around a school so the teachers would be aware of possible resources — in people, business, and-or environment — that they might use with their classes.

One release day was spent at Tennant company, a manufacturer of large cleaning equipment, touring the manufacturing plant (several of the teachers didn't know anything about manufacturing and assembly line work), discussing the jobs of the various workers, and talking with the management.

ANOTHER RELEASE DAY was spent going over units, materials, resources, and teaching activities, as well as developing further ideas for implementing career education in the classroom.

Many of the units studied by the teachers had been developed earlier by the Minnesota Environmental Sciences foundation, according to Miss Pat Watkins, foundation staff member. But one, "Seeds to Cereals," was done by the workshop participants.

Dr. Allen Anderson, professor of psychology at the University of Minnesota, spoke to the group on a release day about the psychology and guidance of children in school.

CAREER EDUCATION PROCESS

Several of the teachers described the process of the career education done with their classes, some formally and some without special structure.

"WE TRY TO MAKE THE CHILDREN AWARE of the different kinds of work that people do and of the interdependence of people on each other's careers," Miss Klein explained.

"Parents of fifth graders in our room are visiting the class to tell about their careers."

The classes have heard an explanation of the oil business, refining and distribution; interior decorating; general construction; the job of an artist who is editor of "Illustrator" magazine; and several others.

MRS. NANCY MOE'S KINDERGARTNERS at Pilgrim Lane changed their playhouse to a service station and a bakery and, while wearing the appropriate hats, "role-played" a baker, a cook, and a station attendant.

"In almost every area we study, we talk about the people's work," Mrs. Moe said.

AND IN THE "SEEDS TO CEREAL" UNIT developed in the workshop, Mrs. Daehlin and her Sunny Hollow second graders studied the interrelatedness of the jobs of the farmer, elevator operator, transportation people, and processing workers who handle the seeds on their way to the grocery shelf as breakfast food.

A speaker from General Mills explained how his company makes the seeds into cereals, discussing the many different jobs in the plant.

"FIELD TRIPS ARE ANOTHER IMPORTANT PART of career study," Mrs. Jan Crawford, Pilgrim Lane fifth grade teacher, said. "Youngsters are able to see the people at work and ask questions like 'Do you like your work, do you feel it's important, don't you get tired, and what training did you need,' as well as observing the work itself."

Mrs. Crawford and Mrs. Darlene Jones visited the airport with their fifth graders and interviewed people who work in many stages of airline work: ticket agents, mechanics, pilots, and stewardesses.

Miss Klein and Mrs. Crawford took their classes on a field trip to Hiawatha school. The school building, the nearby park, and the homes in the older neighborhood were subjects of booklets the youngsters made later, comparing the environments of Hiawatha with those of their own schools. How the environment affects the schools was a major part of the project.

BEST COPY AVAILABLE

KEITH MOLNAU, PILGRIM LANE fourth grader, moves the marker after Jackie Orr, sixth grader, brings in the sighter as they surveyed Pilgrim Lane playground to make a contour map.

MRS. MARGE FIERS, third grade teacher at Pilgrim Lane, takes a sighting while Miss Ginny Roberts, second grade teacher, holds the equipment steady during the workshop contour mapping project.

"THEY'RE AS TALL as I am," said Devin Ewing, second grader at Pilgrim Lane, as he and Ann Wicshman searched through the weeds on a field trip to find seed samples.

ROBBIE BECKLAND, FOURTH GRADER at Pilgrim Lane holds the marker while his partner points to the appropriate level for sighting while contour mapping the playground.

APPENDIX VII

A PROPOSAL FOR
ELEMENTARY INTEGRATED INDUSTRIAL ARTS

Independent School District 281

Robbinsdale Area Schools

by

Roy Seitz

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INTRODUCTION AND RATIONALE

Elementary teachers have long recognized the value of construction activities. At the present time there is a nationwide resurgence of the values derived from utilizing industrial arts methods and materials.

Elementary school industrial arts should not be an added subject, but an integrated part of the regular curriculum. It should not be a course, solely for the purpose of teaching tools, but it should *be* a teaching tool![1]

Industrial arts activities will reinforce learning, enrich learning, provide motivation for learning, and increase the desired outcomes of learning.

Most of the research in the field of elementary industrial arts states that it should be an integrated program, emphasize the technological aspects of the school curriculum, promote interest and motivation to facilitate better learning in the other areas of the curriculum, and provide a manipulative method in which children are actively involved in the process of learning other subjects in the elementary school curriculum, such as science, math, music, physical education or social studies. The proponents of an integrated curriculum see industrial arts as contributing as much to a teaching method as to a subject matter area.[2]

Industrial arts is unique in the fact that its activities can provide a greater variety of elements that enhance the learning process more than any other single descipline.

When industrial arts is considered in the broad spectrum of education K-12, in the beginning levels of education it should be completely integrated with all subject matter areas. As it progresses on through middle school or junior high and into senior high, it becomes a group of specific courses.

DEFINITION

Integrated elementary school industrial arts is that phase of the elementary school curriculum which provides the child with opportunities for exploration, manipulation, experimentation and planning, using tools, materials, and techniques appropriate to converting these materials to serve some useful purpose. Activities and experiences include the construction of projects related to and reinforcing the elementary school subject matter content, and study of industry and technology with emphasis on its organization, materials, processes, occupations, products and problems, and their effect on man's culture.[3]

OBJECTIVES

Elementary integrated industrial arts is aimed at developing the full potential of all children. This includes helping the child serve a happier, better-adjusted life with increased academic achievement. Educators must recognize and deal with individual levels of development in such personal characteristics as attitudes, values, self-concept, knowledge, and psychomotor skills. This overall purpose may be achieved through the following objectives:

1. To help children develop confidence in their ability to make useful things with their hands.
2. To develop an understanding of the careers and vocations in our industrial society.
3. To develop an attitude of investigation, experimentation, and problem solving.
4. To develop an understanding of planning and organization to reach higher levels of achievement.
5. To develop avocational interest and worthy use of leisure time.
6. To develop social competencies such as self control, cooperation, dependability, and ability to work with others.
7. To provide opportunities to develop muscular coordination and release of emotional tensions.[1]

RESEARCH

Ermete J. Raffaelli, E.I.A. Consultant, Reading, Pennsylvania, presented the following material at the 1970 A.I.A.A. annual convention in Louisville.

> Industrial arts made its debut in elementary education in 1861, at Oswego, New York. Superintendent Edward Sheldon demonstrated the effectiveness of industrial arts training in helping children to master many kinds of abstract subject matter.
>
> Despite its early beginnings, elementary industrial arts training flourished in relatively few places. General misunderstanding about the nature and purpose of elementary industrial arts has perhaps been the greatest obstacle to its spread.
>
> Its primary objective is to make use of industrial arts as a teaching tool rather than the teaching of tools. In this respect, it is reasoned that the levels of abstraction might be reduced and the traditional studies might be more concrete.
>
> Elementary industrial arts is not intended to be an additional subject, nor should it be based on trade and job analysis, but rather a method to implement all instruction. Neither should it be secondary school industrial arts reduced in difficulty, nor a series of operations to be performed or a group project to be made.
>
> Industrial arts in the elementary school is not a number of kinds of materials with which to become familiar, nor are tools, machines, and numerous skills to be mastered. Industrial arts at the elementary level is a "means to an end." It simply helps the school do better those things the school is already trying to do.
>
> It is one thing to talk about "wheels" or "axles." It is quite another thing to experience making or manipulating them. Establishment of more adequate meanings through curriculum enrichment, especially first-hand contact, is the most important contribution of industrial arts in the elementary school.[4]

Industrial arts at the elementary school level should not be another subject to be added to an already crowded curriculum. It should be an enrichment; an integral part of the established curriculum. Its purpose is to assist in the achievement of the accepted goals of elementary education.[5]

Dr. Robert Thrower supported the position that industrial arts should be a part of the elementary school curriculum.

"I am firmly convinced that technology and its implementation through industrial arts activities should be integrated into the very core of the curriculum of every grade level, beginning with kindergarten. Elementary classroom teachers must be trained in the use of tools and materials of industry. They must also be trained in the methods of utilizing industrial arts activities." [6]

Dr. Marshal Schmitt, specialist in industrial arts for the U. S. Office of Education, says that industrial arts has the following five values for children: (1) economic, (2) social, (3) educational, (4) human, and (5) cultural.

The economic value comes from an understanding of the many occupations and being able to select a field of employment that will be meaningful and beneficial to the individual. Also, it is derived from understanding products and procedures of fabrication in order to more intelligently and economically utilize the goods and services of industry. The social value is derived from experiences of working together in a situation similar to that in which one will find himself in industrial employment. The human value is gained through the development of creative skills, the development of attitudes, pride in workmanship, and the desire to do a job well. Also, the human value is obtained through the understanding of self in light of technology in our contemporary society. The cultural value of industrial arts is gained through the understanding of the development of our culture, an understanding of its nature today, and an understanding of the direction in which it is going. [7]

PROGRAM PROPOSAL

New Program

In grades K-3 industrial arts activities should be taught by the elementary teacher in a self-contained classroom. The projects at this level are more likely to be group rather than individual. For example, the construction of such things as model stores, fire stations, airplanes, and buildings would give realism to their social studies when they study transportation, housing, and manufacturing. Math and science are involved when they do planning, measuring, differentiating between sizes, shapes, and structure.

In grades 4-6 a separate room with a resource teacher would seem to be the best arrangement. The room should have benches or heavy tables, no chairs, and it should be large enough to handle a regular class from another room. Girls as well as boys would participate. Students could do planning and work out problems in the regular classroom and the manipulative activities in the laboratory. Constructional activities could involve woodworking, paper construction, metal tooling, block printing, leather work, wood carving, plastic construction, and etching.

Providing for individual interest is often the difference between success and failure in our schools. Personal projects constructed for personal reasons can be highly motivating. For personal projects the student may be required to read for information, plan, design, measure, and solve problems. All of these would be a practical application of the academic skills.

Classroom or group projects related to the academic materials may be accomplished by dividing the class into different interest groups. Pupils' needs and interests are diversified and through various construction activities they can satisfy these needs.[1]

To determine the educational benefits of a construction activity the following criteria may be used:

1. Select the activity in terms of student capabilities, readiness, and interest and how it relates to units being studied.
2. Will it promote critical thinking, planning, and problem solving?
3. Is it practical in terms of available time, tools, and materials?
4. Does the activity meet a significant need for the group?[8]

Existing Program

Industrial arts is offered at the present time in summer school in the traditional manner as an entity by itself. Students are exposed to manipulative skills and related information pertaining to materials, tools, and processes. No overt attempt is made to integrate it with other disciplines.

The course is open to fifth and sixth grade boys and girls. It was offered for the first time in the summer of 1970 and 180 students enrolled. The number of students was restricted by the availability of teachers.

Classes were conducted in a regular classroom with tools brought in from junior highs. Portable cafeteria tables were used as a work surface. The course is project-oriented and the following materials are used: wood, plastic, leather, copper, and silk screen materials with appropriate fasteners. A minimal list of tools is used to convert these materials to a usable project.

The classes were two hours in length, five days a week for six weeks. The students were given a recess after one hour; however, they were reluctant to leave the room to go outside the building.

This reaction from students and favorable comments from parents would seem to indicate a successful course.

Teacher In-Service Training

The concept that all elementary teachers should have training in industrial arts may be entirely foreign and vehemently rejected by some women teachers or even some men teachers. However, it is a required course in some of our state colleges for elementary teacher preparation.

Years ago it may have been considered masculine for women to do this type of activity. Today, women are leaving the comfortable confines of a home and working beside men in factories, driving vehicles on the highways, and assuming many of the same roles as a man. This trend is further evidenced by the recent women's liberation movement.

It would be rather difficult to require all elementary teachers to take this training; however, those choosing not to engage in this activity could temporarily exchange classes with other teachers who would involve the students with this type of activity.

Implementing Teacher In-Service

A plan for retraining elementary teachers would be to give them industrial arts courses conducted by industrial arts teachers within our district. The teachers presenting the courses could be remunerated comparable to the amount compensated for summer school. The teachers taking the in-service courses could be given board credit as other upgrading courses are rewarded.

I would suggest sixth grade teachers be given priority for taking the course, and when that grade level has completed the in-service, the next grade level should be given the opportunity and so forth until the kindergarten teachers have been included.

Teacher Implementation of Student Program

The success of an educational program is dependent upon the effectiveness of the personnel who conduct the program at the operational level. The classroom teacher must assume the primary responsibility for the integrated industrial arts activities of the children under his direction.

The principal can give encouragement and support, and in a large system an industrial arts consultant can also assist the teacher and the principal in organization and implementation.

If the teacher is to utilize industrial arts activities effectively, he or she must understand this type of activity and how it can be integrated with other subject matter areas. The teacher must also develop skills and knowledge pertaining to industrial arts activities.[8]

There is no structural guide or outline at the operational level included in this report. After elementary teachers have had industrial arts training, a curriculum writing team composed of teachers representing the various disciplines can work out suggestive details on an operational basis.

The states of Florida and New Jersey; the cities of Los Angeles, Kansas City, Reading, Pa., and others have written curriculums at the present time. Many articles and books are appearing regularly on elementary industrial arts.

CAREER DEVELOPMENT

No single educational discipline can assume total responsibility for career development. Integrated industrial arts at the elementary level would seem to be the most effective method for making youngsters conscious of the world of work. A "hands on" experience with various materials, processes, and tools can be a very vivid means for the child to see the world of work as it is. Studying a list of job descriptions, wage comparisons, or advantages and disadvantages of certain occupations is meaningless to a fifth grade student. Live experiences with construction activities provide opportunities for cultivating work habits, organizing time, cooperating with others, and feeling the satisfaction of completing a task. These are basic talents of industry a child must learn in his quest for a career.[9]

The purpose of orienting the school program in the world of work or career development is based on the hypothesis that the world of work can be used as a framework to unite and direct educational efforts. It is derived from the belief that unless the school program reflects work as a part of our culture, it cannot attempt to transmit our culture. Without this orientation boys and girls cannot wisely select and pursue a program of studies that will permit the development of their maximum potential. Consequently, occupations in industry--the world of work--or career development should be a discernable influence in the content of the total school program.[10]

ROOM ORGANIZATION

Industrial Arts Laboratory

This is a room especially equipped for industrial arts activities, with equipment, tools, and supplies. The benches should be low enough to accommodate the children; they should have vises attached, and there should be adequate work space for 24 students.

Classes can come here to do constructional activities related to the total elementary program. It may also be used as an activity center for the slow learner and the gifted. This type of room would have the proper atmosphere and all the materials necessary to fill individual and collective needs. The responsibility of this room should be delegated to no more than two teachers.

Industrial Arts Classroom Area

It is now a common practice to divide elementary calssrooms into areas such as reading center, science center, social studies center, and library. Why not include an industrial arts center with equipment, tools, supplies, and space for about six children to work at one time? This method of organization would be less expensive than the industrial arts laboratory; however, if this type of center was added to each room in the building, the total cost per building would exceed that of the industrial arts laboratory. At the present time some teachers are organizing their rooms in this manner with limited facilities.

Portable Laboratory.

This is a work bench, mounted on wheels, with tools and equipment. It could be kept in a custodian's room, media center, or library. Teachers could borrow the portable laboratory when needed in a classroom. If there were enough units available in a school, it could be scheduled much the same way as audio-visual equipment--the fewer the portable units, the more rigid the schedule.

This type of equipment would require a minimum of space and expense.

The portable laboratory should include such features as a work bench top, storage space under the top, vises on the corners, tool panels, retractable casters, and a size large enough to accommodate four to six pupils at one time.[1] These units are on the market at the present time.

All three methods of equipment organization have merit. Before any one method is adopted in a large school district, an experimental program utilizing all three different methods should be carried on.

RECOMMENDATIONS

1. The elements of industry and technology are a vital part of the public school curriculum; it should be a part of the education for all children.

2. An elementary curriculum committee should be formed to assess the present curriculum and make recommendations.

3. A budget for elementary industrial arts facilities should be established.

4. In-service training to elementary teachers desiring industrial arts courses should be given.

5. The present elementary industrial arts program in summer school should be continued.

CONCLUSIONS

Children need to know about the total society in which they live, and our society is all woven together with industry and technology playing a huge part. It is not enough that information reflecting our society be presented in written form or with audio-visual materials. The only interaction most children have with this technological information is through audio-visual contact. If this information about the world in which we live is to become meaningful to children, we must provide many different options that will promote understanding. Considering the success of the experimental programs in other states, elementary integrated industrial arts for boys and girls should be a part of our curriculum.

Elementary teachers are constantly requesting help to initiate industrial arts activities. In some instances they are getting money from parents' groups; or they are soliciting tools and materials from the community; or they are borrowing equipment from junior highs on a temporary basis. All of these kinds of things would indicate teachers are ready for integrated industrial arts. This being the case, let's help them do better the things they are going to do anyway.

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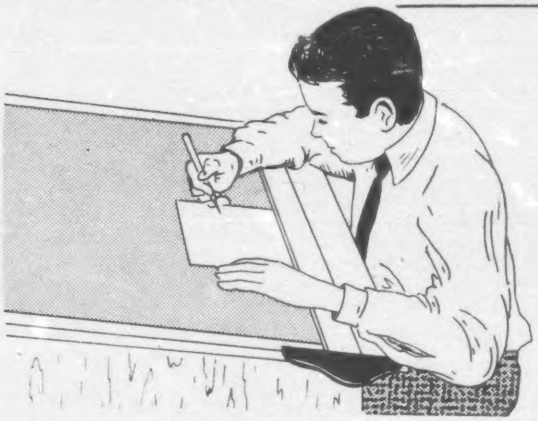
APPENDIX VIII



CAREER RELATED MATH UNITS

CAREER RELATED MATH UNITS

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Funded as a Joint Project Between the Minnesota State Department of Vocational Education and School District 281, Robbinsdale Area Schools

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CAREER RELATED MATH UNITS

INTRODUCTION

Career Development Concept comes to the educational scene at an opportune time. This philosophy, which relates school subjects to careers at all levels, suggests some answers to the questions of "relevancy" leveled at schools. We in education have proclaimed a "comprehensive" curriculum while practicing a "college preparatory" emphasis. The relationship of all school subjects to potential careers provides a nondiscriminating vehicle for learning math, science, English, social studies, etc., with an opportunity for "real life" situations and examples that the students can understand. While providing a base for a comprehensive offering and helping the subject matter areas to relate their content to living, Career Development Concept provides for a third vital process: career exploration.

This project represents a breakthrough in actual materials relating the subject matter of math to all levels of the world of work.

MATERIALS

Cluster Information: The materials that have been written as a part of this project are organized under the career cluster concept. A cluster is a broad category under which several related careers can be listed. Example: Sales Cluster has been designated cluster one and has six different career units. (See following pages for a complete list of the clusters and associated career units.) For each broad category or cluster, information has been gathered and will be published as a book apart from the career units themselves. This will allow the student to survey a cluster before he does any specific career units. See the samples contained on pages 5, 18, and 26 of this book.

Career Units: Each career unit will contain information relative to the career as well as problems relating to the specific math skills required. The units were written to give a personalized approach rather than a telling informational approach. Each unit will have built into it a math pretest, near the beginning of the unit, so that the student can see at the outset of the unit those math skills he may need to work on. The units will be packaged in a kit with each kit containing 10 copies of every unit. It is hoped that this will make an adequate classroom set.

Teacher's Guide: A teacher's guide will be available and will contain the answers to the pretests and the answers to all problems in the units.

PROCEDURE

The career units are meant to be used under an individualized approach to instruction. Each student should begin by reading in the Career Cluster book. He should look through the list of clusters to find one of interest to him. After he has read the cluster information he may choose to work on one of the career units that are listed for the cluster. He should then go to the career kit and get a copy of the particular unit he wishes to work on. The student should work on the unit up through the pretest. After he has completed the pretest the student should check with his teacher for correction of the pretest. The teacher and the student together should decide whether he should continue the unit or at this point work with some math skills where deficiencies showed up on the pretest. It is at this point that a time limit for the completion of the unit should be agreed upon by the student and the teacher.

Each student should be required to keep a three-ringed notebook in which he will put the units that he has completed as well as the unit he is presently working on. This procedure will allow the teacher to check on the students regarding how much work they have completed as well as what they are presently working on. These notebooks should probably be kept in the classroom and allowed out only with special permission of the teacher.

The number of units to be completed will vary depending upon the units themselves and the additional work that a student may need to do on his math skills.

It is suggested that a teacher keep a file box of test items with two or three test items for each career unit. One or several of these items can be given to the student when he has completed the unit. This will allow the teacher an additional check on the work the student has done.

Bill Heck
Cliff Helling

LIST OF CAREER UNITS

I. Sales

1. Department Store Clerk
2. Service Station Attendant
3. Route Salesman
4. Auto Salesman
5. Cashier
6. Advertising

II. Insurance

1. Insurance Salesman and Adjuster

III. Construction

1. Carpenter
2. Electrician
3. Plumbing
4. Operating Engineer (Heavy Equipment)
5. Surveyor

IV. Medical and Health

1. Laboratory Assistant
2. Ward Secretary
3. Dental Assistant
4. X-ray Technician

V. Secretarial and Clerical

1. File Clerk
2. Typist
3. Auto Parts Counterman
4. Receptionist and PBX Operator

VI. Mechanical Occupations

1. Auto Mechanic
2. Small Appliance Repairs
3. Tool and Die Maker
4. Machinist

VII. Driving Occupations

1. Race Car Driver
2. Commercial Truck Driver

LIST OF CAREER UNITS

VIII. Personal Services

1. Barber
2. Beautician -- Cosmetologist
3. Child Care
4. Stewardess
5. Interior Decorator

IX. Performing Arts

1. Radio Announcer
2. Cameraman and Photography
3. Musicians
4. Small Bands
5. Artist -- Commercial and Regular

X. Government Jobs

1. Mailman
2. Policeman
3. Air Traffic Control
4. Recreation and Park
5. Forestry Technician

XI. Utilities

1. Lineman
2. Telephone Repairman

XII. Manufacturing and Supply

1. Warehouse and Stocking
2. Inventory Control

XIII. Printing and Publishing

1. Printing

XIV. Home Management

1. Personal Finances
2. Selecting a Home
3. Food Purchase
4. Clothing Construction
5. Buying and Caring for a Car
6. Computing Take-home Pay

CLUSTER ONE -- SALES

When looking at a future career, it is always important to look at the characteristics one possesses. A person's likes and dislikes, his interests and personality, etc., should be considered when planning the future. If someone is thinking of a career in sales, it may be even more important to do this, for the future of a person in this field depends so much on the kind of person he is. Success in selling comes to people who seem to have personal characteristics which allow them to succeed.

Most goods that we have contact with go through three steps. They are produced, they are distributed, and they are used or consumed in some way. The whole middle step, distribution, is what sales is really involved with. Sales is a huge field with 4.6 million people involved with it in some way. In this field of work, individuals are employed to sell everything there is to sell in many different kinds of businesses and in every part of the country (or world). The level of training varies with the job, and the income received for selling also varies with the job. The work appeals to and uses people of all ages. It is an occupation that has openings for almost every kind of person.

The most familiar sales job involves receiving money from someone who has already selected a piece of goods, such as a cashier or store clerk does. Training for this position is usually given on the job. An ability to do math calculations, pay attention to detail, and follow instructions is important; but an employer is possibly even more concerned with other characteristics of the individual. These would include having an interest in people and being poised when meeting the public, as well as having a pleasant personality and a well-groomed appearance.

Other types of sales jobs require the seller to go out and make his own contacts with potential buyers. These people need to be able to work without someone pushing them to do the job. This requires *self*-discipline and *self* motivation. Customers seldom come to the salesman *asking* to have something sold to them. Some sales jobs require a great deal of training and a very thorough knowledge of the product to be sold, so that the seller can explain the product, tell or show how it works, and be convincing that the product is a good one. A computer salesman is an example of this kind of selling. His training may even involve some post-college education. Other jobs in selling may require on-the-job-training, a one or two-year training program at a technical, trade, or junior college or sometimes a four-year college degree.

The income received by sales people depends on many factors. A retail clerk, if just beginning a job, may earn $1.50 to $1.70 an hour, usually with regular advances in pay as experience is gained. Others may receive a regular salary plus commission, and their total pay is determined by the amount they sell. Some salesmen, such as the computer salesman mentioned above, may make only a few sales a year, but the sums of money involved are very large, and his salary and commission, if he receives one, are also large.

In the immediate future, to keep even with the number of salespeople now employed, 275,000 additional workers will be needed nation-wide. These 275,000 will only replace those who quit working or retire. Others, of course, will be needed to replace those who move to other kinds of work.

The one characteristic most important in the sales field would be the personality of the individual. There are no selling jobs that do not involve dealing with other people.

CLUSTER ONE -- SALES

A pleasant person, able to get along well with people, will find many opportunities in this line of employment.

The movement of goods and supplies so as to meet the wants of people will always be required. Goods will always be sold and likely will be sold in even greater quantities as the years go by. The future of a career in sales does, however, depend more on the state of the economy than most other jobs do. During periods of increased spending by the buying public, promotions and pay increases come rapidly, but a sales person is also likely to be one of the first people to feel a tightening or slow-down in the economy. This occurs because people spend less, resulting in smaller commissions and fewer people being hired.

Most areas of sales now have national organizations or associations to which you can write to get more specific information. These are listed in the _Occupational Outlook Handbook_ under the specific titles of different sales jobs.

If you are interested in a sales job, work through one or all of the following units in the job kit:

1-1 Department Store Clerk
1-2 Service Station Attendant
1-3 Route Salesman
1-4 Auto Salesman
1-5 Cashier
1-6 Advertising

CLUSTER ONE -- SALES

UNIT 1

Department Store Clerk

Millie is a girl who has decided to go into the retail sales field. She wants to be a department store clerk. While checking into this kind of work, she found that over three-fifths of the 3,000,000 retail salespersons are women. She also found that starting salaries ranged from $1.50 to $1.70 an hour and that seemed to fit in with what her friends were earning in other jobs at this level.

She did find that there are some disadvantages in being a clerk. Week-end work and extra hours during the time before holidays didn't appeal too much to Millie. She discovered, however, that most clerks received a discount on products purchased, that most get a commission on what they sell, and that there seemed to be a good future for the person who does well.

Millie now went to the local newspaper and found the following ad:

> SALES
>
> We have several schedules for daytime and evening sales openings. No experience required, immediate openings. Apply Personnel Office.
> Dayton's Dep't. Store

Millie called and arranged an appointment for an interview. Upon her arrival she was asked questions about her educational background and any previous experience. Also, she had to take an employment test similar to the following. (Please take the following test; show all work on this paper. Check the results with your teacher before going any further.)

Pretest for Department Store Clerk

Add

1. $ 7.89
11.00
10.99

2. $ 1.29
.39
27.50
.79
1.09

Subtract

3. $10.00
- 7.97

4. $20.00
- 16.50

Multiply

5. $ 6.49
13

6. $17.87
6

7. 1/3 x $27.99

8. 25% of $24.50 is ________

9. A 20 percent discount on $37.50 = ________

10. Three items @ $3.27 is ________________

11. A good place to get additional information about specific jobs in the sales area would be:

a. A dictionary
b. The Occupational Outlook Handbook
c. A college catalog
d. An encyclopedia

12. The most likely starting pay that you would receive if you had no training in a sales job, would be:

a. $2.25 per hour
b. $1.50 per hour
c. $ .85 per hour
d. $1 per hour

UNIT 1-1

Millie satisfactorily completed the interview and the pre-employment test and was conditionally hired. On her first day of employment, she was assigned to the bedding and linens department. There she was trained by the department supervisor. One of her first duties was to check the amount of cash on hand in the register. The register contained 1-$20, 3-$10, 6-$5, 15-$1, 10-$.25, 12-$.10, 25-$.05, 5-$.01. The total amount in the register was 13.________. Does this seem to be a reasonable amount of cash for making change?

Soon after the store opened, a customer approached Millie wishing to make some purchases. She bought a pair of pillow cases @ $2.39 each and a set of matching top and bottom sheets at $6.50 per sheet. The customer's bill for the goods came to 14.____________ and with three percent sales tax amounting to 15.____ ____, her total bill was 16.________________. She handed Millie two $10 bills and received 17.____________in change.

The following problems are similar to the one above. Be sure to add the three percent sales tax in computing the total cost.

Five additional problems involving items and sales tax:

18. 1 mattress pad, $10.28
    1 mattress and innerspring, $205.99
    2 pillows, $6.25 each
    2 pillow cases, 2 for $4.26
    Total cost________________

19. 6 sheets, 2 for $2.83
    1 bedspread, $34.89
    Total cost________________

20. 1 bedspread -- twin size, $15.61

4 sheets @ $1.62

3 pillows @ $3.48

1 mattress pad, $6.52

Total cost ________________

21. 1 mattress cover, $8.17

4 pillow cases @ $2.14

Total cost ________________

22. 1 electric blanket, $14.65

3 sheets @ $2.34

2 pillows @ $6.49

1 mattress, $49.68

1 bedspread, $29.82

Total cost ________________

Three days after her initial employment the store held its annual January white sale. During this sale most of the items in Millie's department are marked from 10 percent to 50 percent off the regular price. A lady purchased a mattress regularly priced $69, now marked down one third from the regular cost. The sale price was 23.__________. She also purchased two pillows regularly priced $6.76, each now on sale at one fourth off the regular price. The sale price of the pillows was 24.__________. The lady's total purchases came to 25.__________ (be sure to add sales tax), a savings of 26.__________ from the presale price.

A sample receipt form from the above transaction is found on page 7.

Study it thoroughly and complete the following five problems using the blank receipt forms provided after page 15. Follow the same format used in the example to complete the following five problems. Check your work with your teacher.

Five problems dealing with sale items and using receipts: (Figure 3 percent sales tax.)

27. Bath towel set @ $12.69
    33% discount

    Bunk bed sheets (2 sets) $8.97 per set
    50% discount

28. Mattress, $47
    1/3 off

    Pillows, 3 @ $6.97 each
    15% off

    Mattress pad, $11.32
    20% off

29. Pillow covers, 2 @ $4.97 each
    30% off

    2 top sheets @ $8.50 each
    25% off

    2 fitted sheets @ $9.50 each (also 25% off)

30. 6 bath towels @ 2 for $2.22
    33% off

    1 dozen hand cloths @ 39¢ each
    33% off

31. Pillow cases, 3 @ $1.79 each
    25% off

    Sheet sets, 2 @ $11.79 per set
    25% off

UNIT 1-1

Millie decided to purchase some items on sale. In addition to the sale discount she was eligible for a 10 percent employee's discount on the sale price. She purchased a bedspread regularly priced $17.89 on sale at 30% off the regular price. The sale price was 32.__________. She then deducted her 10 percent employee's discount from the sale price, which resulted in a price of 33.______ for the bedspread. She bought two pillows at a regular price of $6.76 each, now on sale at 1/4 off. Her cost for the pillows was 34.________. Her total cost (plus tax) was 35.__________. Because of the sale and her employee's discount, Millie saved 36._________.

Wages

By the end of the week, Millie collected her first paycheck which had been figured in the following manner:

40 hours @ $1.60/hour = 37.______________

8 hours overtime @ $2.40/hour = 38.______________

Total wages = 39.______________

Being part of the working force, Millie now had the chance to help support her country and her state, as well as prepare for her retirement. These deductions from her paycheck came to:

Federal Income Tax:	$10.18
State Income Tax:	$ 2.49
Social Security:	$ 5.18

This resulted in total deductions of 40.______; her take-home pay then came to 41.__________.

For additional exploration on computing take-home pay, see unit 14-6.

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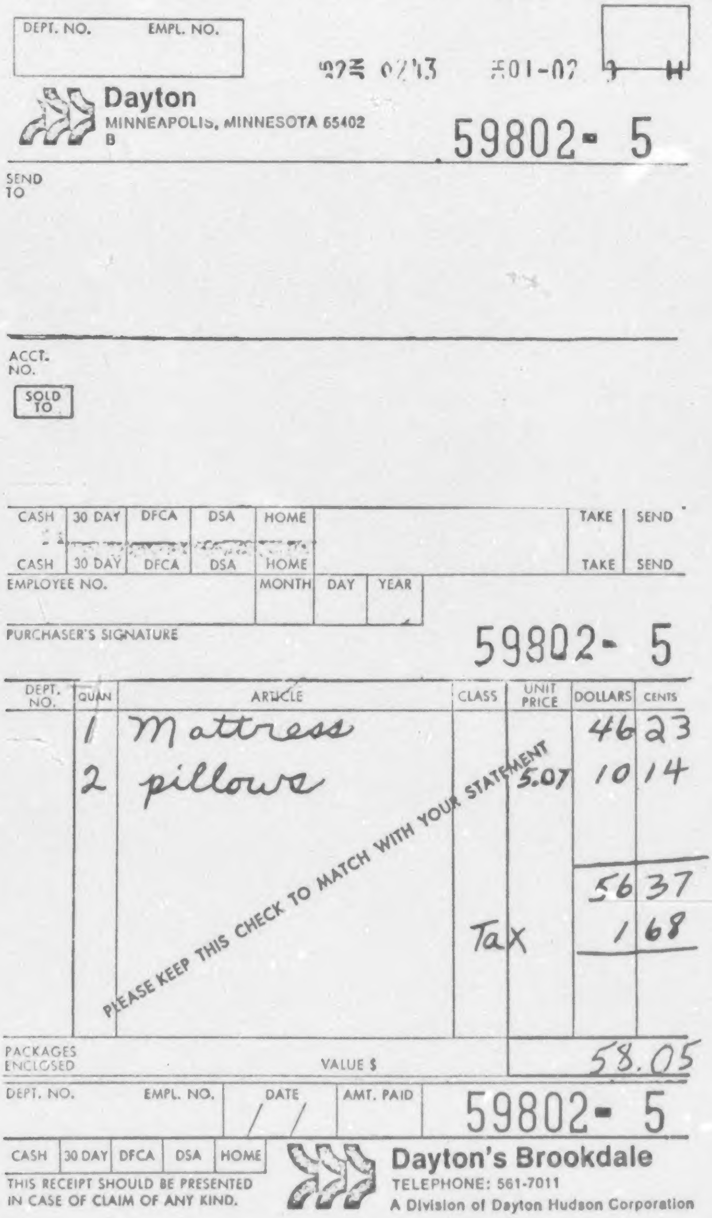
SAMPLE

RECEIPT

FORM



DEPT. NO. EMPL. NO.

[illegible]

Dayton
MINNEAPOLIS, MINNESOTA 55402
B

59802- 5

SEND TO

ACCT. NO.

SOLD TO

CASH	30 DAY	DFCA	DSA	HOME		TAKE	SEND
CASH	30 DAY	DFCA	DSA	HOME		TAKE	SEND

EMPLOYEE NO.	MONTH	DAY	YEAR

PURCHASER'S SIGNATURE

59802- 5

DEPT. NO.	QUAN	ARTICLE	CLASS	UNIT PRICE	DOLLARS	CENTS
	1	Mattress			46	23
	2	pillows		5.07	10	14
					56	37
			Tax		1	68

PLEASE KEEP THIS CHECK TO MATCH WITH YOUR STATEMENT

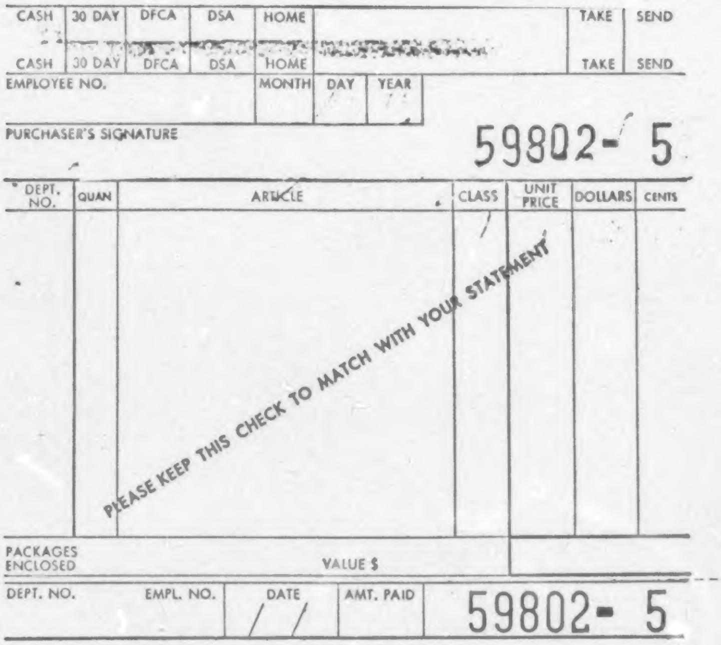
PACKAGES ENCLOSED VALUE $ 58.05

DEPT. NO.	EMPL. NO.	DATE	AMT. PAID	
		/ /		59802- 5

CASH	30 DAY	DFCA	DSA	HOME

THIS RECEIPT SHOULD BE PRESENTED IN CASE OF CLAIM OF ANY KIND.

Dayton's Brookdale
TELEPHONE: 561-7011
A Division of Dayton Hudson Corporation



CASH	30 DAY	DFCA	DSA	HOME		TAKE	SEND
CASH	30 DAY	DFCA	DSA	HOME		TAKE	SEND

EMPLOYEE NO. | MONTH | DAY | YEAR

PURCHASER'S SIGNATURE

59802- 5

DEPT. NO.	QUAN	ARTICLE	CLASS	UNIT PRICE	DOLLARS	CENTS

PLEASE KEEP THIS CHECK TO MATCH WITH YOUR STATEMENT

PACKAGES ENCLOSED

VALUE $

DEPT. NO. | EMPL. NO. | DATE / / | AMT. PAID

59802- 5

Problem 27

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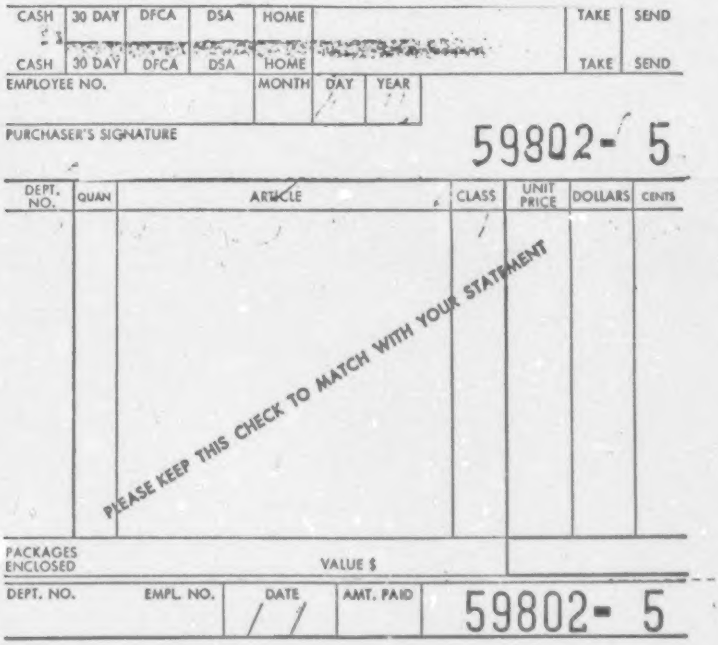
Problem 28



CASH	30 DAY	DFCA	DSA	HOME		TAKE	SEND
CASH	30 DAY	DFCA	DSA	HOME		TAKE	SEND

EMPLOYEE NO. | MONTH | DAY | YEAR

PURCHASER'S SIGNATURE

59802- 5

DEPT. NO.	QUAN	ARTICLE	CLASS	UNIT PRICE	DOLLARS	CENTS

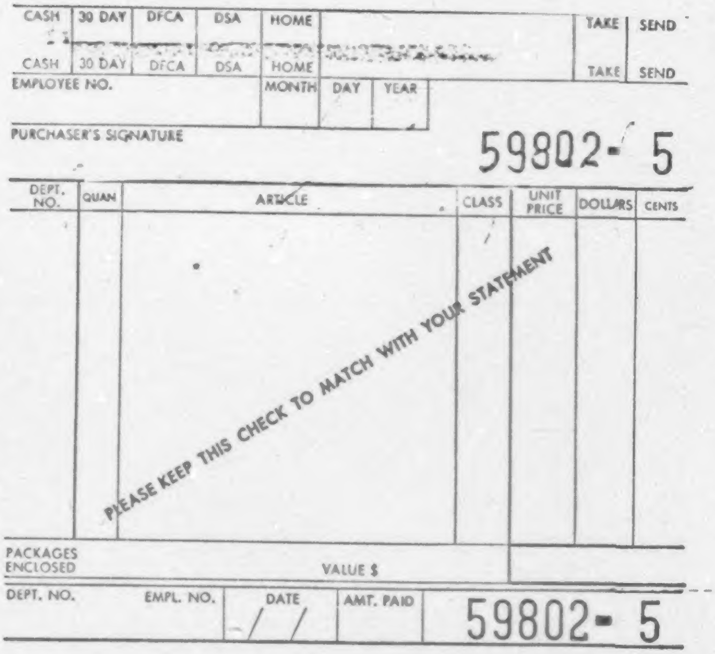
PLEASE KEEP THIS CHECK TO MATCH WITH YOUR STATEMENT

PACKAGES ENCLOSED

VALUE $

DEPT. NO. | EMPL. NO. | DATE / / | AMT. PAID

59802- 5



CASH	30 DAY	DFCA	DSA	HOME	TAKE	SEND
CASH	30 DAY	DFCA	DSA	HOME	TAKE	SEND

EMPLOYEE NO. MONTH DAY YEAR

PURCHASER'S SIGNATURE

59802- 5

DEPT. NO.	QUAN	ARTICLE	CLASS	UNIT PRICE	DOLLARS	CENTS

PLEASE KEEP THIS CHECK TO MATCH WITH YOUR STATEMENT

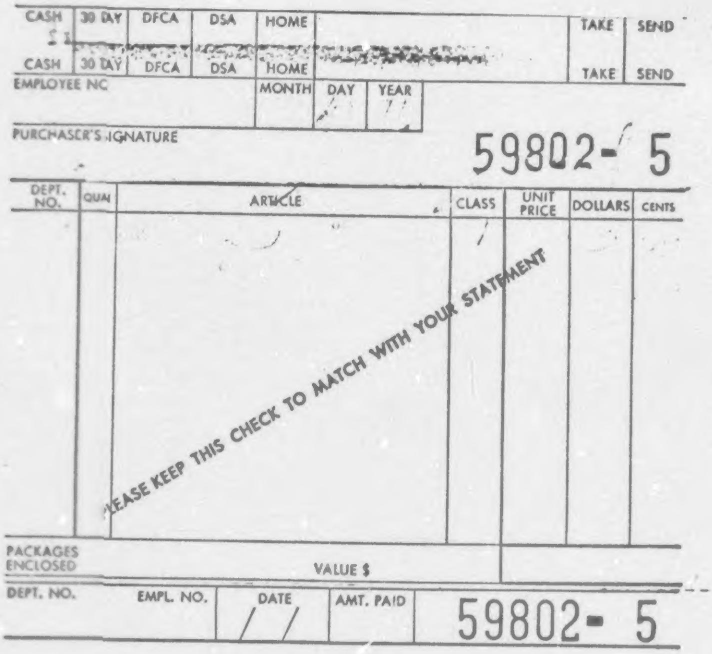
PACKAGES ENCLOSED VALUE $

DEPT. NO.	EMPL. NO.	DATE	AMT. PAID	59802- 5
		/ /		

Problem 29

BEST COPY AVAILABLE

Problem 30



CASH	30 DAY	DFCA	DSA	HOME	TAKE	SEND
CASH	30 DAY	DFCA	DSA	HOME	TAKE	SEND

EMPLOYEE NC MONTH DAY YEAR

PURCHASER'S SIGNATURE

59802- 5

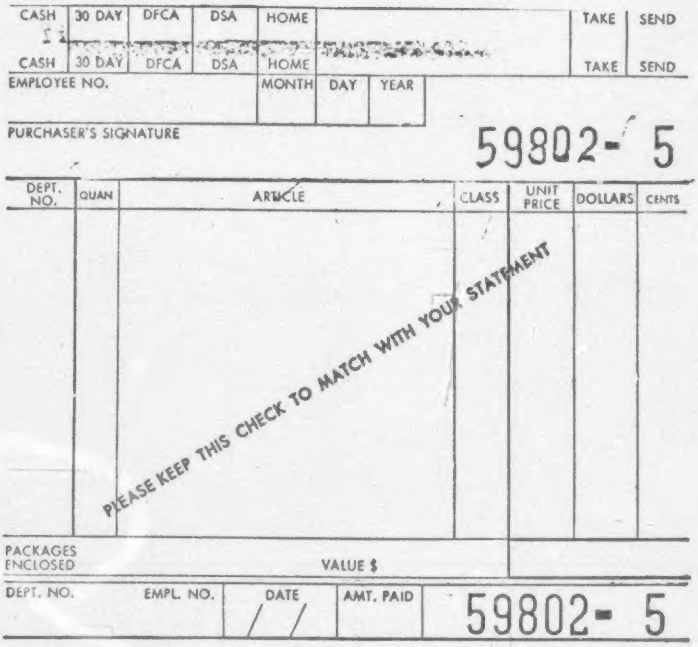
DEPT. NO.	QUAN	ARTICLE	CLASS	UNIT PRICE	DOLLARS	CENTS

PLEASE KEEP THIS CHECK TO MATCH WITH YOUR STATEMENT

PACKAGES ENCLOSED VALUE $

DEPT. NO.	EMPL. NO.	DATE	AMT. PAID	59802- 5
		/ /		

Problem 31



CASH	30 DAY	DFCA	DSA	HOME	TAKE	SEND
CASH	30 DAY	DFCA	DSA	HOME	TAKE	SEND

EMPLOYEE NO.	MONTH	DAY	YEAR

PURCHASER'S SIGNATURE

59802- 5

DEPT. NO.	QUAN	ARTICLE	CLASS	UNIT PRICE	DOLLARS	CENTS

PLEASE KEEP THIS CHECK TO MATCH WITH YOUR STATEMENT

PACKAGES ENCLOSED

VALUE $

DEPT. NO.	EMPL. NO.	DATE	AMT. PAID	
		/ /		59802- 5

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The following graph shows the number of people working in some of the building trades:

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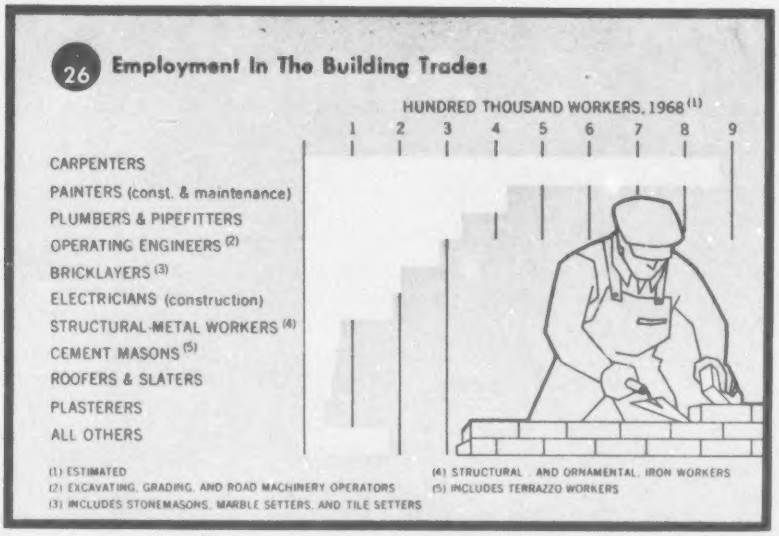


26 Employment In The Building Trades

(1) ESTIMATED
(2) EXCAVATING, GRADING, AND ROAD MACHINERY OPERATORS
(3) INCLUDES STONEMASONS, MARBLE SETTERS, AND TILE SETTERS
(4) STRUCTURAL, AND ORNAMENTAL, IRON WORKERS
(5) INCLUDES TERRAZZO WORKERS

It is easy to see that these areas account for a great number of the skilled workers in our country. In fact, this industry employs more than 2 3/4 million skilled workers. Most of the people represented on the graph are journeymen. Journeymen are those skilled workers who have reached a designated level of training and experience. They have almost always successfully completed an apprenticeship program.

These workers are employed mainly by contractors who are the people responsible for the construction of a building. They (the contractors) hire the different tradesmen to do the work. Some of the journeymen work directly for the contractors and others are self-employed, working by the hour or the job for different contractors from week to week.

Most of the training which is required before a person can become a journeyman is acquired on the job. An apprentice is a learner who is working with an experienced tradesman. He has to work a certain number of hours supervised by this journeyman and he also must attend a certain number of evening school classes. This period of apprenticeship usually takes from two to five years. During the time a person is an apprentice, he receives a percentage of the pay the journeyman receives. He usually gets an increase every six months and the starting pay is often about 50 percent of the journeyman's pay. In addition some apprenticeship programs require that the apprentice take an exam before becoming licensed. These tests require a knowledge of the trade but also a knowledge of state and local regulations regarding the trade.

Current per hour pay (May 1971) for some different journeymen in the Twin Cities is as follows:

Asbestos worker	$7.55
Bricklayer	7.61
Carpenter	7.13
Dry wall applicators	7.13
Electrician	8.00
Floor coverers	7.65
Iron workers	7.55
Marble setters	7.38½
Operating engineers	8.00

When a journeyman looks at his future, he can see much good but also much uncertainty. Even with the economic growth of recent years, the growth of employment in this area will be moderate at best. The opportunity for movement to being a foreman, estimator, or even a contractor is good for the capable person, however.

Another problem is the seasonal nature of the work. Although most construction now can proceed the year around, winter months still bring about a drop in employment in these trades. One has to realize, of course, that even if a person does continue to be employed during the winter, the conditions under which he works may not be as pleasant as at other times of the year.

Construction workers are almost always members of a union, especially in the urban areas. A journeyman will pay $6 to $12 per month in dues to his union, and in return for this, the union provides certain benefits and will do the bargaining which establishes wages.

All in all, many opportunities in many diverse kinds of work exist for the individual who enjoys working with his hands in a physically active kind of job. The following are those construction jobs which are included in the packets of units. Feel free to pick those that you would like to work with and don't hesitate to investigate others that you might be curious about.

3-1 Carpenter
3-2 Electrician
3-3 Plumbing
3-4 Operating Engineer (Heavy Equipment)
3-5 Surveyor

CLUSTER THREE -- CONSTRUCTION

Unit 4

Operating Engineer (Heavy Equipment)

It was kind of fun watching the backhoe dig up his front yard, at least to Jim it was. His folks weren't too happy to have to pay the cost of hooking up to the city sewer, but their septic tank had again given them problems, so they had decided to do it. It looked as though there were at least 20 different levers and controls on that machine -- a machine that Jim hadn't even realized was called a backhoe before today. He had always thought it was just a tractor with a long scoop mounted on the back.

During the operator's lunch break, Jim had talked to him and found out that he could also operate graders, draglines, cranes, and even bulldozers. The operator had learned how to do this at the Staples Vocational School in a course called heavy equipment operation that lasted for 21 months. Jim was told that many operators don't go to school; rather, they register with the union and get placed on a job when one is available. They usually start as an oiler -- a helper for the operator, and work up to the $6.90 to $7.50 per hour pay that the full operator receives.

Jim had asked if there were any special requirements to becoming an equipment operator and had learned that high mechanical aptitude and good physical ability, of course, were required. Jim remembered the high score he had received on the mechanical aptitude section of a test he had taken in ninth grade. The operator went on to tell him that the math he had in the classroom part of the course at the Staples School was the hardest part for him. Most of these problems were on-the-job kinds of problems and he gave Jim some examples.

UNIT 3-4

In order to put in the basement of a new house, the contractor had to hire an excavating company to dig a hole the dimension of the basement and haul the dirt away. The house was to be 40' long and 20' wide. To allow room for workers, three feet were to be taken out on each side. The hole was to be 15 feet deep.

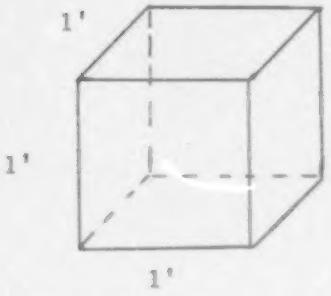
1. Draw a diagram of the area to be dug out, one a top view (showing area of base as well as extra area for workers) and a front view (showing length and depth). Do these very carefully, using a ruler.

2. Using the formula area = length x width (A = L x W).

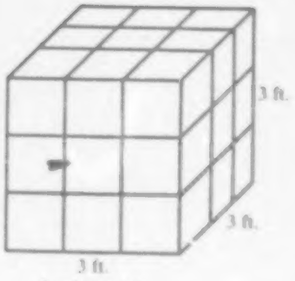
   a. Find the area of the house. __________ Length and width must be in terms of the same units, as feet, yards, etc. Area is always given in square units; i.e., square feet and square yards.

   b. Give the area of the hole to be dug ________ (includes extra area)

3. To determine the amount of dirt to be removed, we must include a third dimension -- that of depth. "Cubic" is the term used to measure volume.



The diagram is a picture of a block with dimensions of length = 1', width = 1', and depth = 1'. This would be a picture of a block one cubic foot in volume.



1 cubic yard

This diagram is of one cubic yard.

   a. How many cubic feet are in a cubic yard? _____________

   b. The formula for volume would be V = length x width x ______.

c. Returning to the basement problem, how many cubic feet of dirt will have to be removed for this basement (use volume = length x width x depth, V = L x W x D)? __________

v = _________ ft. x ________ ft. x __________ ft. = ________ cubic feet

d. How many cubic yards would this represent? _____________

At this point, check all answers with your teacher. When all questions are cleared up, proceed.

4. The number of cubic yards to be removed from the basement referred to in problem one is a.__________ . Round this off to the nearest whole cubic yard. b.___________

A front end loader (a scoop shovel) is used to remove the dirt. It can scoop 3/4 of a cubic yard of dirt out each time. How many scoops are necessary to remove all of the dirt? c.__________

The excavating company had three dump trucks to haul the dirt away. If each one can haul six cubic yards, how many loads will be necessary to carry all the dirt away? d.____________

If it takes 20 minutes to load one truck, how many hours will the whole job take? e.___________

5. Find the volume of dirt to be removed for a basement whose dimensions are 26' x 35' x 18' (l,w,d). ____________ (Don't forget work area.)

6. Find the volume of dirt to be removed for a basement 35 ft. x 6 yds. x 14.5 ft. ____________ (Don't forget work area.)

7. A crane can remove 2/3 of a cubic yard of debris from a wrecked building in each scoop. If the operator makes 72 scoops per day, how many cubic yards of debris will be removed?____________

8. A contractor is pouring cement on the third floor of a new building. The most economical way to get the cement there is to attach a cement bucket to a crane and have it deliver the cement. If the bucket holds 1 1/3 cubic yards of cement, how many trips must the crane make to pour a floor 105 ft. x 55 ft. x 6 in.? ____________

If you wish more information on this occupation, check the materials available in class or from the counseling department. You can find a short explanation of the job in the Encyclopedia of Careers as well as obtain a brochure from the Staples Area Vocational-Technical School.

CLUSTER FOUR -- MEDICAL AND HEALTH

Doctors and nurses -- isn't that what we think of when we think of the medical and health field? Doctors and nurses do make up a large part of this cluster of jobs, but the many, many other job opportunities are often overlooked. The medical field includes at least 25 different jobs all directly related to health. When we add the many support areas (secretaries, clerks, custodians, etc.) we have a huge field much larger than the 3.5 million working most directly with health. Registered nurses alone total around 700,000.

All levels of training are represented in these different jobs. From some on-the-job training received by a nurses' aide to the many years of school required of the would-be doctor, all levels of schooling and income are available.

Four common health occupations are included in this packet of units: lab assistant (4-1), ward secretary (4-2), dental assistant (4-3), and x-ray technician (4-4), but many others should be investigated by the person who likes serving others in the medical field.

Let's look at the jobs available by taking Bill through his different contacts with health people following his motorcycle accident.

Most of the people who saw the accident didn't think Bill was hurt too badly. He had pulled out in front of a car which was turning -- but the driver of the car decided not to turn. When hit, Bill was thrown across the road and hit his head on something. He could later remember being told not to worry about the damage done to his cycle, and he remembered that when he tried to sit up he got very dizzy. The next thing Bill remembered, two attendants were carrying him to the waiting ambulance -- he felt self-conscious that so many people were paying so much attention to him. There was the ambulance driver, the attendant, and an intern (a man in his final training before becoming a doctor). The intern asked where it hurt most but didn't seem to be as concerned with the scratches on Bill's arm (which hurt most) as he did with the lump on the side of Bill's head. Bill lay patiently as he got his noisy ride to the hospital.

Again he was self-conscious when so many people started doing so much after the ambulance stopped at the emergency entrance of the hospital. A nurse came to get information from the intern; two people moved him from the stretcher to a cart, and he was wheeled down the hall past a switchboard operator who was just then sending the other ambulance to some other problem. He was placed in a room where a nurse cleaned the cuts on his arm, and later a doctor came in with Bill's father.

After Bill had answered some questions, he heard the doctor tell his dad that he'd be staying overnight for some tests and some x-rays. Bill wondered, as he was helped into a hospital gown, who would have to wash the sheets that he had gotten blood all over.

The trip to the x-ray department was almost fun. He again had someone pushing him down the corridor and new people took over when he got there. Some x-rays were taken of his head and workers in another department hooked up some wires and took some readings. He also had some blood taken at this stop. Bill decided that others still would be doing things with these x-rays and other tests and hoped they didn't mix his stuff up with someone else's. He finally got to a hospital room and again saw his dad. For the next couple of hours, he decided to just become acquainted with his new "home." The excitement of the last couple of hours had been enough.

Bill didn't get much of a chance to relax, however, because a nurse came in and checked him over and an aide explained how to use the "call," etc. Then an orderly came in to help Bill wash up for his evening meal. While eating, Bill realized that he had never thought of the fact that a hospital also has to prepare food for the patients.

That night, still a different group of people took over the work of running the hospital and Bill wondered how *he* would like working all night. That night wouldn't have been a good one to start out with because a storm hit and Bill woke up to much scurrying because the electricity had just gone out. It was surprising how fast the lights came back on and Bill was further surprised to hear from his dad that it had been out for a couple of hours at home. Upon investigation, Bill found that the hospital had used its own generators for quite awhile before outside current was again restored. Bill wondered who had done the work of getting things going when the electricity did go out and decided that a hospital without its own power source *would* really be in trouble.

By the next day, the tests had come back, the hospital pharmacy had provided some pills, Bill's head was clear, and the doctor decided that he could go home. Check-out took some time and while Bill's dad was clearing with the clerk, getting his computerized bill straightened out and an okay for him to leave, Bill made a list of the people he had had contact with while at the hospital for that one night:

The list included:

Ambulance driver

Ambulance attendant

Intern

Switchboard operator

CLUSTER FOUR -- MEDICAL AND HEALTH

Nurse
Orderlies
X-ray technicians
Lab technicians
Doctor
Pathologist
Radiologist
Station secretary
Nurse's aide

Practical nurse
Custodian
Elevator operator
Clerk
Computer operator
Pharmacist
Cook
Receptionist

As Bill left, he just knew that even with this long list, he had certainly left out many.

Four medical and health jobs are included in the units of this cluster:

4-1 Laboratory Assistant
4-2 Ward Secretary
4-3 Dental Assistant
4-4 X-ray Technician

CLUSTER FOUR -- MEDICAL AND HEALTH

Unit 4

X-ray Technician

"Today I'm going to assign a topic to each of you. You'll research these yourself and sign up on this sheet for the day you want to give the results orally. There is room for three of you on each day. Are there any questions so far?"

About halfway down the third row a hand went up. Tex Nixon asked, "Do we have to use the topics you have listed, or can we choose our own?"

"What topic do you have in mind?"

"Well, I'd like to report on x-rays."

"That's fine! I don't have it written down but I'll put x-ray down here -- and sign you up for it."

There was a lot more work involved in researching this topic than Tex realized. He went to the school library and then to the public library. It seemed that most of the information he got was very sophisticated, so he went to the clinic downtown and talked to the x-ray technician.

"First let me mention something about terminology. When we take a picture with x-rays we don't call it an x-ray. It's a radiograph or picture. Actually I'm a radiograph technician."

"Why do they call it a radiograph? Does the name actually describe the operation?"

"In a way. You see, the x-rays are actually a result of electron or radio wave bombardment. They are directed onto a film. When they hit the crystals on the film, the film darkens and this causes a picture. This picture is rather like a graph and the name radiograph actually says this."

UNIT 4-2

"There must be a lot of math and science you've got to know in order to be a radiograph technician. Right?"

"Well, not a lot, but sometimes you do use quite a bit. Here, look at this." Tex took the sheet of paper the technician was holding. "These are some sample problems we give to people who think they might be interested in radiography."

1. Ratios and proportions

   a. $\frac{?}{15} = \frac{40}{30}$ ans. ____________ b. $\frac{?}{10} = \frac{20}{30}$ ans. ____________

   c. $? = \frac{15 \times 40}{30}$ ans. ________ d. $? = \frac{10 \times 20}{30}$ ans. __________

2. Percentage (means hundredths)

   a. $\frac{1}{4} = \frac{25}{100} =$ ____________% b. $\frac{1}{2} = \frac{?}{100} =$ __________%

   c. $\frac{33\ 1/3}{100} =$ ___________% d. $.375 = \frac{37.5}{100} =$ ________%

3. Squares of numbers

   a. 10^2 (ten squared) or $10 \times 10 =$ _________

   b. $15^2 = 15 \times 15 =$ ___________ c. $25^2 =$ ____________

   d. $17^2 =$ _____________ e. $65 \times 65 =$ _____________

Check the above problems with your teacher before going on with this unit.

Tex could remember most of the math involved from his junior high courses. It really seemed strange that as he watched the technician go through some demonstrations, never once was a paper used for figuring or even a reference made to some charts of calculations. He asked the technician about it.

"Most of the work becomes routine," he was told. "There's a lot of duplicate work, so after a while you've got most of the facts memorized."

"I'll bet it's not so easy at first."

"No, it's not. Here, we'll go through some of the typical problems."

During the next hour, Tex learned about the chemistry of the film and why the print looks like it does. He was told that the density of the material caused the lighter parts on the print.

Teeth appear very clear on the print because enamel is the most dense material in the body. Then in the order of lesser density comes bone, muscle, fat, and gas. The thickest and most dense parts of the body appear in shades of gray and gas (air) appears black. This is why you can see the outline of the body in an x-ray picture.

The technician then explained the five factors that are of prime importance in the exposure, or amount of radiation reaching the film. This controls the density or clearness of the picture.

1. Kilovoltage This is the power in units of 1000 volts. (Kilo means 1000.) Increasing the kilovoltage increases the number of high energy x-rays which have greater penetrating power and are not as readily absorbed by the structures being radiographed. Therefore, a greater number of rays reaches the film and provides a denser picture.

An increase of one-sixth in kilovoltage (KV) approximately doubles the exposure.

Example: 18 KV + (1/6 x 18 KV) = (18 + 3) KV = 21 KV

If the initial KV is 60 KV, what increase is necessary to double the exposure?

4. __________

Initial KV is 30 KV 5. __________ KV will double the exposure.

Initial KV is 24 KV 6. __________ KV will make the exposure four times as strong.

This is not a strict proportion. However, it is accurate enough for general clinical work.

2. Milliamperage (MA) This is the tube current. As the number of electrons are increased, the number of x-rays reaching the target increases almost exactly by the same proportion. Again, this is not precise, but good enough for clinical purposes. Increasing the amperage has nothing to do with the penetrating power of the x-ray beam. It only affects the strength of the beam.

Example: To double the exposure, you double the MA. To triple the exposure, you 7. __________ the MA. To cut the exposure in half, you multiply the MA by 8. __________.

3. Time The actual exposure is directly proportional to the time of the exposure. Doubling the time doubles the exposure.

In actual practice, the time and the milliamperage are combined and called milliamper-seconds, abreviated MAS.

If a technician has a setup for 100 MA and 1/10 seconds, then we actually have

$$100 \text{ MA} \times \frac{1}{10} \text{ seconds}$$

$$= 100 \times \frac{1}{10} \text{ MAS} = 9.\ \_\_\_\_\_\_\_ \text{ MAS}$$

For faster exposure (as on a small child) we can increase the MA to 400 and reduce the time to 10. ________ to still get 10 MAS.

400 MA at $\frac{1}{25}$ sec. = 11. __________ MAS

350 MA at $\frac{1}{10}$ sec. = 12. __________ MAS

200 MA at $\frac{1}{30}$ sec. = 13. __________ MAS

4. Distance This is not as simple as the other three factors. As the distance is doubled, the exposure is reduced to $\frac{1}{2^2}$ or $\frac{1}{4}$ of the original. If it is tripled (increased by three) then the exposure is reduced by $\frac{1}{3^2}$ or 14.________.

Use this formula: $\frac{I}{i} = \frac{d^2}{D^2}$ Where I is the intensity at the new distance,

i is the intensity at the old distance,

d is the old distance,

and D is the new distance.

If the intensity at 20 inches is 100 and we increase the distance to 40 inches what is the new intensity?

I = ?
i = 100 rays per min.
d = 20 inches
D = 40 inches

Now substitute into: $\frac{I}{i} = \frac{d^2}{D^2}$ or $I = \frac{d^2 \times i}{D^2} = \frac{(20)^2 \times 100}{(40)^2}$

$$I = \frac{15.\_\_\_\_\_\_\_\_ \times 16.\_\_\_\_\_\_\_\_}{17.\_\_\_\_\_\_\_\_} = 25$$

Now work out this problem. If the intensity of radiation at 60 inches is 10 rays per minute, what will the intensity be at 20 inches.

$$I = \frac{i \times d^2}{D^2} = \frac{18.\underline{\qquad\qquad} \times 19.\underline{\qquad\qquad}}{20.\underline{\qquad\quad}} = 21.\underline{\qquad\qquad}$$

5. Contrast This last factor is the difference in density between the light and dark areas of the film.

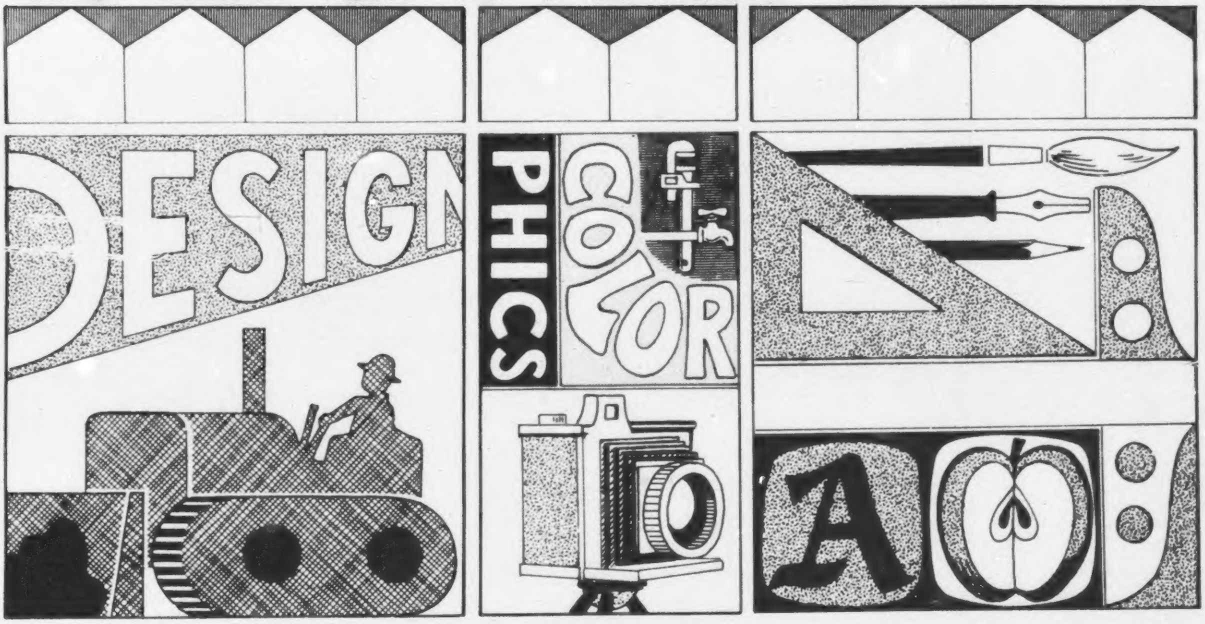
The function of contrast is to make the detail more visible.

Tex soon discovered that the work of an x-ray technician is extremely interesting.

"There's a lot to be said about the guy or gal that takes the shots for the doctors," Tex told the class during his report.

The teacher thanked him for his informative report and gave Tex an excellent rating for a job well done.

GEOMETRY


DESIGN
PHICS
COLOR
A

CAREER RELATED UNITS

GEOMETRY -- CAREER RELATED UNITS

Teacher's Edition

A Joint Project between the Minnesota State Department of
Vocational Education and the Robbinsdale Area Schools

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January, 1973

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INTRODUCTION

This project is an attempt to bring a practical approach to a senior high school geometry course. At the onset of the project, this seemed like a simple matter. The writing team began their work by investigating many careers. They found many isolated cases where geometry is used, but not in sufficient quantity to build a unit. This forced the team, in some cases, to work with broader categories of careers.

The units produced were written using as practical an approach as possible, and only after interviewing a person actually involved in that job. The purpose of the interview was to find the geometry-related tasks of each career.

The total package turned out to be a set of consumable units written in narrative form including six geometry resource units and 22 career units. The units are intended to be used by the students, written in, and kept. Note: These units are meant to be used as a part of a geometry course and are not meant to be used exclusively by themselves.

PROCEDURE

There are several procedures that could be followed in using these materials. One would be to work through all of the resource units with the class and then have students as individuals select the career units they are interested in. A second way would be to allow the students as individuals to begin work in the career units and then refer to the resource units as they are needed.

Evaluation: A most successful way of dealing with units of this type is to assign each unit a point value. A student then must earn a certain minimum number of points working through units of his choice.

CAREER-RELATED GEOMETRY

Answer Keys: The answer keys to these units should be made available to the student by the units, not in book form. This keeps the student from checking the answers for one unit and copying the answers to his next unit.

Resource Materials: Resource materials of value would be:

Occupational Outlook Handbook

Encyclopedia of Careers, Volumes 1 and 2

LIST OF UNITS

I. Geometry resource units

1. Right Triangles and the Pythagorean Theorem
2. Polygons and Their Areas
3. Parallel Lines
4. Standard Constructions
5. Volume
6. Circle Relationships

II. Career units

1. Printing and Graphic Arts
2. Heavy Equipment Operator
3. Fashion and Apparel Design
4. Navigation
5. Painting and Paperhanging
6. Landscape Technology
7. Carpenter
8. Architecture and Drafting
9. Optical Technician
10. Sheet Metal
11. Engineering
12. Machinist
13. Cement Worker
14. Forestry
15. Electrician
16. General Contractor
17. Home Planning
18. Cabinetmaking
19. Plumbing and Pipe Fitting
20. Surveyor
21. Outdoor Advertising
22. Space

OUTDOOR ADVERTISING

Bill came out of his geometry class shaking his head and muttering to himself. He had just learned that his semester grade would be dependent on a project on the uses of geometry in industry. Only last week Ed Zilensky, the class agitator, had tried to put Mr. Meier on the spot by asking him what good was anything they were studying. Mr. Meier had talked for some minutes on practical applications of geometry, but Bill didn't take notes because most of what he said wasn't too important -- so he thought. Now he wished that he had taken notes, for they would have come in handy. Mr. Meier had earlier told the class to expect a project of some sort, but the students were keeping quiet about it in hopes that he had forgotten. It must have been Ed's remarks that brought up the whole matter again.

SAMPLE PAGE FROM UNIT

Practical applications of geometry. Like what? Bill thought more about it as he drove home. He'd like something different and interesting, too! Casually he began humming "It's the real thing -----." "That 's it!" All around him he found billboards advertising all sorts of products. "Why not research the uses of geometry in outdoor advertising?"

Bill's first step was to contact one of the billboard companies in town. He was able to tour the plant and learn first-hand how billboards are produced.

In addition, he learned that advertising firms employ all kinds of different workers from executives to artists and layout specialists, salesmen, copywriters, and other administrative people.

Bill found that advertising firms have many different people of very different backgrounds earning extremely different salaries. They all, however, seemed to have artistic and language ability and interest in addition to an intense interest in working with people. These seemed to be the things that made for successful advertising people.

Managers, account executives, copywriters, media directors, production managers, and research directors were some of the people that Bill saw at work. They all make up a part of the 140,000 men and women working in the area of advertising. This number will not increase significantly during the next few years and competition for jobs will be keen through the 1970's. The highly qualified person, however, will always be in a good position to find employment in this field. "Highly qualified" means being experienced, creative, imaginative, and able to get along well with co-workers. This kind of person, Bill decided, would always be in a good position to find work.

SAMPLE PAGE FROM UNIT

As many as 120,000,000 people may view a poster in one day, depending on its location. Exposure is obvious and exposure is extremely important if one is going to sell a product. Secondly, communications is the name of the game. People need to be convinced that this product is really worth buying, and this communication must take place rapidly, since they're moving and will shortly move out of sight range.

There were basic principles to be followed and, though these were not strictly geometric, Bill thought he should list them:

7 Principles of Outdoor Design

At each step of development, from start to finish, check your design against these seven basic principles:

1. PRODUCT IDENTIFICATION
Does the advertiser's name or product register quickly?

2. SHORT COPY
Is the basic idea expressed quickly, and with impact?

3. SHORT WORDS
Can the reader grasp the idea at a glance?

4. LEGIBLE TYPE
Can the reader *read* the copy at a distance, while moving?

5. LARGE ILLUSTRATIONS
Are the pictures big as all Outdoor?

6. BOLD COLORS
Are colors clearly defined? Do they have impact?

7. SIMPLE BACKGROUND
Does the background interfere with the basic idea . . . or help it?

SAMPLE PAGE FROM UNIT

So far, Bill had been able to gather much interesting information but little which could be related to geometry. Outdoor advertising was definitely a form of art and governed by the rules of art more than by other more rigid guidelines. Color and contrast played very important roles in getting the message across in addition to the copy used, and some of this would be directly related to geometry.

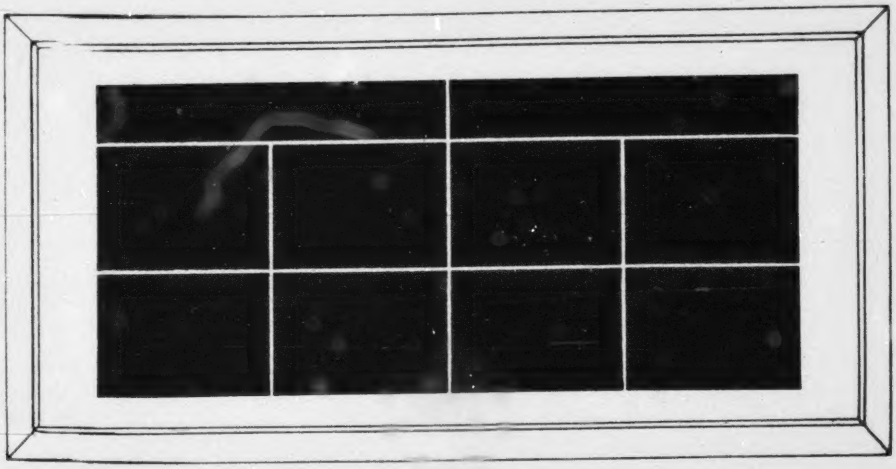
However, the names posters and bulletins kept cropping up and Bill soon learned that there was a difference between them, although various designs could be used for both with minor alterations. Posters are prepared in the proportion 1 x $2\frac{1}{4}$ while bulletins are usually in the proportion 1 x $3\frac{1}{2}$ measuring 14' high and 48' long. As you can see, this proportion isn't exactly 1 x $3\frac{1}{2}$ for the bulletins but rather 1 x 1.______________; for practical purposes, though, 1 x $3\frac{1}{2}$ is close enough.

Remembering that posters run in the proportion 1 x $2\frac{1}{4}$ determine the correct sizes of copies submitted to the advertiser for approval: these usually run 6" x 2. ______" or 8" x 3. ________". Finished artwork may be prepared in 12" x 4. ______", 16" x 5.________", or 20" x 6._____", all of which would maintain the same proportion. In many instances, a design may appear on both posters and bulletins.

Posters come in three basic varieties:

SAMPLE PAGE FROM UNIT

I. 24-sheet poster



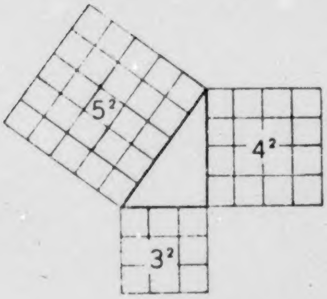
Originally, when presses were smaller, 24 sheets of paper were required for this. Larger sheets are now used, but the term remains. The area between the design and the frame is covered with white "blanking" paper.

RIGHT TRIANGLES

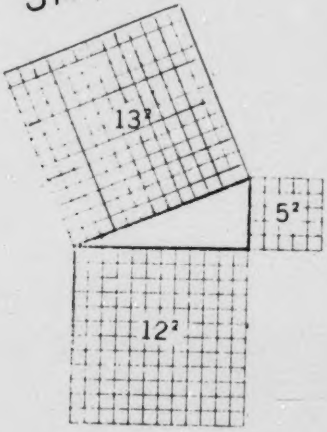
Many years ago Egyptians used the idea that a triangle with sides 3,4, and 5 units long is a right triangle. They used this fact in construction and surveying. The Babylonians knew other right triangles besides the 3-4-5 triangle. For example, they were aware of the fact that a triangle whose sides were 5, 12, and 13 units long is also a right triangle.

Let's investigate a relation between the lengths of the sides of a right triangle. Physical representations of square regions can be cut from graph paper and arranged so that their edges outline a triangle as shown below.

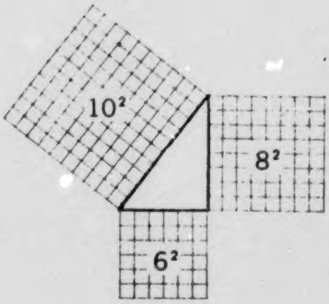
SAMPLE PAGE FROM UNIT



I.



II



III.

Measure the angles of the triangles above. You should discover that all three triangles have a right angle and therefore are right triangles.

RIGHT TRIANGLES

Consider the lengths 3, 4, and 5 of the sides of triangle I.

$$3^2 + 4^2 = 5^2$$

$$9 + 16 = 25$$

Consider the lengths 5, 12, and 13 of the sides of triangle II.

$$5^2 + 12^2 = 13^2$$

$$25 + 144 = 169$$

SAMPLE PAGE FROM UNIT

Consider the lengths 6, 8, and 10 of the sides of triangle III.

$$6^2 + 8^2 = 10^2$$

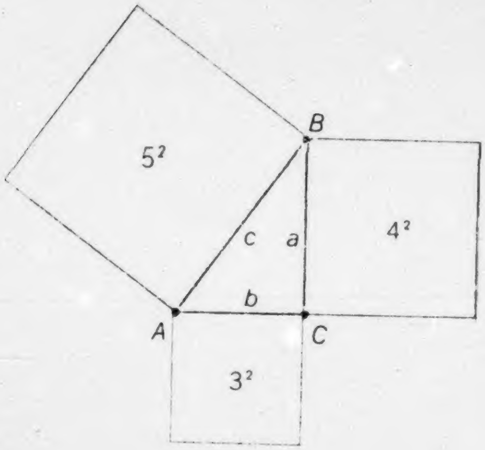
$$36 + 64 = 100$$

You can see it is possible for certain squares having sides equal in length to a, b, and c and respective areas of a^2, b^2, and c^2 square units to be arranged so as to outline a right triangle if $a^2 + b^2 = c^2$ as shown with the 3-4-5, 5-12-13, and 6-8-10 triangles above.

1. Cut three squares out of a sheet of graph paper having lengths 9, 12, and 15. Arrange them on a sheet of paper so that their edges form a triangle.
   - a. What is the measure of the largest angle? ________________
   - b. What kind of triangle is formed? ______________
   - c. If a, b, and c represent the lengths of the sides of the triangle, is it true that $a^2 + b^2 = c^2$? ____________

     Show this!

Consider once again the 3-4-5 triangle. We know now that $3^2 + 4^2 = 5^2$ and that the triangle is a right triangle. Look again at the geometric interpretation of this fact on the following page.



Notice that the length of the side opposite angle A is represented by the letter a . The length of the side opposite angle B is represented by b , and the length of the side opposite angle C by c.

SAMPLE PAGE FROM UNIT

2. a. Which angle of △ ABC is a right angle? ______________

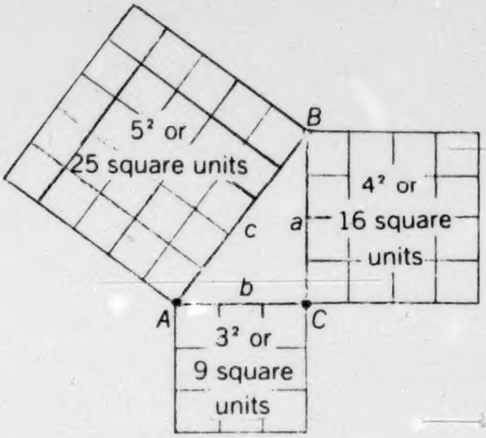
   b. BC and AC are called the "legs" of right triangle ABC. The longest side of a right triangle is called the "hypotenuse." What line segment is the hypotenuse of right triangle ABC?

   ____

   c. The hypotenuse is the side opposite the ____________ angle. The right angle is always opposite the ______________.

The diagram on the following page shows that if each side of the right triangle is one side of a square, then the area of the largest square is equal to the sum of the areas of the two smaller squares.

RIGHT TRIANGLES



We call this relationship $a^2 + b^2 = c^2$ of the sides a, b, and c of any right triangle the Pythagoream Theorem: that is, "For any right triangle, the sum of the squares of the lengths of the legs is equal to the square of the length of the hypotenuse."

SAMPLE PAGE FROM UNIT

3. The lengths of the sides of two triangles are given below. Are they right triangles?

   a. 9 in., 11 in., 12 in. ______________

   b. 12 ft., 16 ft., 20 ft. ______________

The formula $a^2 + b^2 = c^2$ allows us to find the length of one side of a right triangle when you know the lengths of the other two sides. Suppose the two legs were 33 inches and 44 inches. You could find the length of the hypotenuse c in the following way.

$$a^2 + b^2 = c^2$$

$$33^2 + 44^2 = c^2$$

$$1089 + 1936 = c^2$$

$$3025 = c^2$$

$$\sqrt{3025} = c$$

THE LANGUAGE OF WRITING IN A COMMUNICATION SKILLS SERIES: SKILLS FOR LEISURE, CAREERS, AND SELF-DEVELOPMENT

A Joint Project between the Minnesota State Department of Vocational Education
and the Robbinsdale Area Schools

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PREFACE

Our American-English language is ever changing. While new words are added to our vocabulary, more new meanings are added to words we have had for generations. The length of sentences in our language is becoming shorter; much communication goes on only in phrases. One listens more than speaks; speaks more than reads; reads more than writes. Yet this least used of the language arts -- writing -- is an integral part of one's self-development. There are statistical data to be listed, memos to be recorded, summaries to be written, opinions to be expressed, and many other forms and modes of writing. There are secondary students who are deficient in those skills related to written composition, and it has been a handicap in their experiences.

It was an expressed need on the part of a number of English teachers in the Robbinsdale Area Schools to do curriculum writing for these learners but to fit the content into a career-related schema, ungraded and experienced-based in composition skills.

The team of writers came from one school where the English staff had agreed to pilot what was written in the school year, 1972-73. The team gave consideration to several approaches; it believed, moreover, that an approach through occupational classification solely would make the finished product obsolete in a short time. The writers, therefore, have taken a position in the language arts which is stated in their own Introduction and Goals.

Initiating the teacher-related and student-directed activities in this guide this past year at Armstrong Senior High School has brought results in student achievement. The instructors, however, have had opportunity to re-evaluate the content through process and are presently marking those items which worked less effectively and are planning to rewrite sections to suit recurrent needs for their own school.

In view of this judgment for revision, it is recommended that any reader of these materials takes them as suggested means to accomplish goals prescribed by him for his students. At this juncture, the guide stands as first written and approved for classroom experimentation.

The Robbinsdale Area Schools are indebted to the Minnesota Department of Education, Division of Vocational-Technical Education for the largest portion of the funding of this project. Further, the approval received from the Division in the past year has been of encouragement.

Arthur Elfring
June 15, 1973

INTRODUCTION

Society demands a great deal from the individual. Language is one, and probably the most important, tool humans use to fulfill social requirements.

Language may be verbal or non-verbal. In social situations we communicate by

- a. what we say and how we say it
- b. our glances, facial expressions and body postures
- c. our clothes and general appearance
- d. our writing

Inherent in all of the above is the human ability to make choices. Any trip through a department store reveals the wide variety of choices available in possible clothing combinations. Humans make gestures and facial expressions naturally when situations call for them. In speaking, man commands a wide variety of voice inflections and has the further advantage of a listener who can send signals to indicate whether the message is coming through clearly or not.

In writing, however, the message depends almost entirely upon the communicator's ability to make the proper choices in terms of audience, purpose, and occasion. Since written language presupposes that the receiver of the message is not present, the writer is deeply involved in aspects of the communication process where there is no immediate feedback. Once a message-sender has made the decision to convey a written message, he then must have available and at his command many skills that will help him make the message clear, precise, and effective.

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GOALS

1. To make students aware of the language choices available to them
2. To help students understand that their language reveals a great deal about their self-image
3. To help students understand that their language skills reveal their feelings about and consideration toward other people
4. To help students recognize that language skills may be increased and with an increase in language skills comes an increase in an ability to get along in the world
5. To help students understand that just as society has social conventions by which human beings can operate efficiently, it also demands skills in the forms of written communication
6. To help students understand that in practically every career, writing
7. skills of some sort will be necessary
   To help students become aware of the necessity for choosing accurate, precise language in dealing with other's feelings and values
8. To help students understand that language preciseness is necessary in dealing with vocabulary of the world of work
9. To help students understand that slang and colloquialisms are an effective tool in appropriate situations

10. To help students learn possible ways of securing information
11. To help students learn how to use information effectively
12. To help students learn to evaluate information received and sent
13. To help students learn to use a variety of language skills ranging from formal to informal English depending upon the appropriateness of the message and the audience
14. To help students formulate goals for themselves in terms of strenthening their abilities to effectively communicate in written language
15. To help students learn to ask questions that elicit the responses they desire
16. To learn to anticipate the effect his message will have on his audience
17. To learn to understand the basic assumptions that are made when written communication takes place
18. To learn to recognize ways in which feelings may be communicated -- to become more sensitive to what people are really saying
19. To become aware of socially acceptable standards of written communication forms

USING THE SECTIONS

Units I, II, III, IV may have teacher activities or student activities or both. Activities that support the objectives are listed with each objective. They will be identified as T-1 or S-1 -- meaning Teacher Activity 1 or Student Activity 1, etc.

Materials specifically for teachers are found on the blue pages.

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APPENDIX IX

OCCUPATIONAL PROGRAM DEVELOPMENT

CREDIT: Two University of Minnesota graduate E.D.C.I. credits

COST: $30 tuition; $4 materials

COURSE LENGTH: 16 hours and 40 minutes. Seven hours on the first Saturday, then seven hours the second Saturday, two weeks later, plus two hours 40 minutes for field interview

PARTICIPANTS: All staff, counselors, administration, K-12

METHOD: Lecture, small group discussion, task group, field interview, and individual task

INSTRUCTOR: Cliff E. Helling. The instructor has broad experience in the business world, has been a teacher of math, business subjects, social studies, a distributive education and office education coordinator, adult instructor, administrator, counselor, and coach among other jobs in education. He holds five degrees from the University of Minnesota: BA, BS, MA, ED, SP, and PH. D.

GOALS OF THE COURSE: Specific objectives covered in the class

As a result of this course the educator should be able to:

1. Understand and describe related problems in education and the potential for correction by the utilization of the career development concept.
2. Understand, conceptualize, and describe the concept of occupational development as it relates to vocational education including distribution, trade, and office occupations.
3. Assess define, and apply the elements of occupational development. Produce an educational unit related to his field.
4. Identify and utilize sources of information. Develop this data into practical applications through field interview, group work, and individual effort.

PROCEDURE AND SCHEDULE

First Saturday

8-10 a.m.	Orientation to problems in education
10-10:20 a.m.	Coffee and break
10:20-11:20 a.m.	Small group process orientation
11:20 a.m.-12 noon	Orientation to career development concept
12 noon-12:45 p.m.	Lunch
12:45-2 p.m.	Orientation to career development and example program elements

2-2:20 p.m.	Coffee and break
2:20-3 p.m.	Distribution of materials for course and assignment; open questions
3-3:45 p.m.	Small group discussion Tasks A. Critique of presentation B. Clarification of concept C. Discussion of assignment

Field interview and production of related career development unit from first Saturday to second Saturday.

Second Saturday

8-9 a.m.	Orientation to a district-wide career development program
9-10:30 a.m.	Small group discussion Tasks Compile a plan as a recommendation to the participant school district. This plan should contain the elements of district-wide K-12 career development implementation.
10:30-10:50 a.m.	Coffee and discussion
10:50 a.m.-12 noon	Resume small group; finish task and questions
12 noon-12:45 p.m.	Lunch
12:45-2:30 p.m.	Small group discussion Tasks A. Each member will discuss the unit or units he developed and plans for implementing. B. Other group members will contribute data and suggestions based upon field interview, past experience, and knowledge of the concept in an effort to aid each member in the refinement of his units.
2:30-2:50 p.m.	Coffee and discussion
2:50-3:45 p.m.	Open questions, evaluation, and discussion

Note 1: The unit or units developed must be typed with the following outline format. The original black copy must be turned in. A copy should be turned in the second Saturday, while one is retained (several may be made to share with the group) for group discussion. The ones turned in will be collected and reproduced as sample career development units available to other staff members interested in seeing practical examples of the concept.

1. Writer's name
2. Unit name
3. Department (or departments)
4. Course and grade
5. Time required
6. General statement of purpose
7. Objectives of the unit
8. Resources
   A. Equipment
   B. Outside personnel
   C. Special arrangements
   D. References
9. Outline of the unit

Note 2: This unit or units should be complete enough for a like discipline educator from another district to utilize it in his class.

TEACHER ______________________________

FIRM ________________________________

JOB IDENTIFICATION FACTS

Job Title ____

1. Why are you working? ____
   - A. Are you the major wage earner in your family? ____________________
   - B. Do you enjoy your work? ____________________________________
   - C. Why did you choose this type of work? ________________________ ____
   - D. Is this the type of work you plan to stay with in the future? ________ ____
   - E. Have you ever thought of quitting? ____________________________
2. How hard do you work? ____
   - A. Can you determine your overtime? ____________________________
   - B. What kind of work load do you have? __________________________ ____
   - C. What are your hours? ______________________________________ ____
   - D. Salary? Minimum ________________ Maximum ____________________
   - E. Other fringe benefits? ____________________________________ ____
3. Are there pressures, strains, or anxieties in your work? ____________ ____
4. What special problems do new employees frequently have in adjusting to the job? ____ ____
5. What are the most important personal characteristics for being successful in the job? ____ ____
6. What other requirements are necessary for the job? __________________ ____ ____
   - A. Education? ____
   - B. Special skills? ____
   - C. On-the-job training? ____________________________________
7. In your opinion, what are the opportunities for advancement in your job? ____
8. Are you secure in your job? ____________________________________
9. Do you get enough recognition from your work? ______________________ ____
10. What are your attitudes toward unions and union membership? ____________ ____

JOB IDENTIFICATION FACTS

11. Would you object to working with someone in a minority group? ____________

    A. Do you have any minority group members working here? ____________

12. Does your employer encourage you to get more training? ____________

    A. Do you feel limited because of your level of training? ____________

    B. Would you change your background of training if you could? ____________

    C. Do you want to have your son or daughter to follow in your footsteps?

13. How do you see your relationship to the company as a whole? ____________

14. In your opinion, what can the school do to do a better job of preparing people to fit into your kind of job? ____________

NOTES

APPENDIX X

YOUR

community career center

7695 42nd Avenue North
New Hope, Minnesota 55427
533-5404

- Job Counseling
- Information and Referral Source
- Dropout Assistance
- Evening Credit Program

Community Career Center
Call 533-5404

WHAT IS THE COMMUNITY CAREER CENTER?

The Community Career Center is an office that provides a central location for securing occupational and educational information, job listings, and serves as an area referral source.

IS THE CENTER INVOLVED IN OTHER ACTIVITIES?

Yes. The director of the center is responsible for administering the Evening Credit Program. This is evening school in which a person may complete studies that lead to high school credits. The center also provides job counseling for prospective employees, especially young job seekers. The center assists high school dropouts in securing work and provides follow up services as needed.

IS THE CENTER A REFERRAL SERVICE?

Yes. A variety of questions are answered by the center. Most of the questions relate to educational or training possibilities, evening school, and information about the Equivalency Certificate. Some calls are referred to other agencies.

ARE THERE OTHER REFERRAL SERVICE AGENCIES?

Yes. Probably the agency with the most complete file of community resources is the Community Information and Referral Service at 404 South 8th Street. Their phone number is 333-6193. They maintain a file of over two thousand metropolitan referral sources of all kinds.

DOESN'T THE CENTER DUPLICATE THE WORK OF PRIVATE OR STATE EMPLOYMENT AGENCIES?

To some extent there is overlap. The uniqueness of the center lies in a number of differences. First, the center serves a relatively small geographic area. Its services are concentrated. Second, because of the smaller area served, the center can be more personal to both residents and businessmen. Contacts with local businessmen are easily made and residents may drop in easily. Third, a number of the center's functions are an integral part of District 281 and so make education, jobs, and career development one unit. Information gathered from out-of-school residents is reported to the schools for use by teachers and counselors in working with students. Out-of-school people, especially dropouts, can easily earn high school credits or take enrichment courses. In a sentence, the center provides a two-way street between the schools and out-of-school residents in the area of jobs and careers.

WHO IS PAYING FOR THIS?

The center is federally financed and is part of a cooperative project between Independent School District 281 and the Minnesota Environmental Sciences Foundation, Inc. The Village of New Hope is donating the office space.

WHO CAN USE IT?

Any businessman or resident of District 281. Every effort is made to assist registrants in finding an area of work that will lead to enjoyment and success. With the cooperation of area businessmen and residents, the center can help everyone save time and frustration. Call 533-5404 or stop in at 7695 42nd Avenue North (old New Hope Village offices).

- Think how useful a foreign language is to the people who work as members of charitable organizations, or with the Peace Corps.
- What if you want to work in the news media? You must know how to pronounce and spell foreign words and phrases.
- Do you like to work for airlines? Positions with various airlines offer opportunities for extensive travel and wide acquaintance with people in other countries.
- Then there is the wide variety of jobs in hotel work, home economics, and hotel administration.
- Are you interested in the social services? You may work for non-English-speaking areas in our country, or aid the Red Cross, CARE, or agencies abroad.
- Perhaps you are interested in going to college? Armed with a language course, you have a wider choice of schools and additional electives.
- What if you are interested in a research job? From the study of the atom to the habits of a banana spider, no study is complete without consulting the work of foreign experts.
- What if you don't go overseas or take college work? Your foreign language skills may win you a job right here at home with any of the many firms located in the Twin Cities which do international business.

Write to

THE OCCUPATIONAL OUTLOOK SERVICE
U.S. Department of Labor
Washington, D.C. 20210

or

BUREAU OF LABOR STATISTICS
U.S. Department of Labor
105 West Adams Street
Chicago, Illinois 60603

for information on

CAREERS

in which a foreign language is needed or useful.

Quantity	Bulletin	Employment Outlook for	Price (cents)
______	1375-2	Advertising, Marketing Research, and Public Relations Workers ...	10
______	1375-4	Biological Scientists ...	10
______	1375-39	Chemists, Physicists, and Astronomers	10
______	1375-13	Geographers	5
______	1375-10	Geologists, Geophysicists, and Meteorologists	15
______	1375-96	Government Occupations	15
______	1375-97	Hotel Occupations	10
______	1375-33	Librarians	5
______	1375-35	Newspaper Reporters ..	10
______	1375-36	Performing Arts--Musicians, Singers, Actors and Actresses, and Dancers	10
______	1375-102	Petroleum Production and Refining Occupations	10
______	1375-25	Physicians	5
______	1375-107	Restaurant Occupations	10
______	1375-55	Secretaries, Stenographers, and Typists ..	5
______	1375-42	Social Scientists	10
______	1375-43	Social Workers	5
______	1375-44	Teachers and School Counselors	10

FOREIGN LANGUAGES and your career

¿ Cómo está usted ?

Was ist los?

Vous et Moi?

Здра́вствуйте. Как вы́ пожива́ете?

Хорошо́, спаси́бо. А вы́?

WHAT ABOUT FOREIGN LANGUAGES?

As the sun comes up each morning, people all over the world greet each other in thousands of different languages.

Down through the ages men have been held back by the language barrier in their efforts to exchange ideas. It is still one of the obstacles to a better world understanding.

Foreign language study is reaching for a key to this shrinking world of Telstar and jet planes. The most important reason for learning a foreign language is to help you develop an

ATTITUDE

which will lead to

UNDERSTANDING AND COMMUNICATION.

You'll see foreign movies, and you'll watch shows and sports events broadcast from foreign countries. Turn on a short wave radio tonight and see how many languages you can hear. And don't forget the millions of people in the United States who speak a foreign language as well as or better than they speak English. Our country is a melting pot of people who came here to live and are still arriving every day from all over the world.

The combination of a foreign language and a skill are most valuable for the job market.

In order to use the language you study, you will have to be able to understand what you hear, ask and answer questions, and read and write a little.

This takes time and practice. Starting a language is, in a way, like learning to shoot free throws or dribble a basketball, or play a musical instrument, or bake cookies without burning them.

COMMUNICATION

is the key to understanding: from individual to individual
from group to group
from country to country.

Физика
PHYSIQUE NUCLEAIRE
ADVANCED PHYSICS
KURZES LEHRBUCH DER PHYSIK

You cannot wait until a job opportunity is offered and then start to learn the language.

Get out and get started making yourself the kind of ambassador you think this country ought to have!

Learn to understand the differences,
learn about other people,
and learn to respect them.

Learn another language,
and learn it well.

WHAT ARE THE JOB OPPORTUNITIES?

They are many and varied.

Consider the following:

- Perhaps you are interested in an occupational opportunity in the federal agencies? Language skills are a MUST for workers in the Agency for International Development, the National Security Agency, the Institute for Inter-American Affairs, Bureau of Internal Revenue, Department of Commerce, Department of Agriculture, Department of State or the U.S. Information Agency.

  Opportunities exist in administration, clerical help, public health, sanitation engineering, hospital work, agriculture, education (particularly in vocational and teacher-training areas), and business administration.

- Do you want to work overseas with an American business firm? Working knowledge of another language other than English could help you swing it.

  Overseas jobs exist in almost every field: professional, managerial, technical, skilled secretarial, sales, and others.

- Suppose you join the Armed Forces. You may be stationed overseas. Or you may get a job in a foreign country with a federal agency.

APPENDIX XII

POSITION PAPER ON CAREER EDUCATION

Adopted by the Minnesota State Board of Education
on May 2, 1972

Introduction

Whereas career education is often provided in Minnesota's public schools as separate unrelated activities at several grade levels and in a number of subject matter areas, and

Whereas there appear to be no common definitions for career education,

Therefore this position paper has been adopted to provide common definitions to stimulate the coordination of existing efforts and to provide a framework for new activities.

Definition

Career education is an integral part of education. It provides purposefully planned and meaningfully taught experiences, for all persons, which contribute to self-development as it relates to various career patterns. Career education takes place at the preschool and elementary, junior high and senior high, post-secondary and adult levels of education. Emphasis is placed on career awareness, orientation and exploration of the world of work, decision making relative to additional education, preparation for career proficiency and/or specialized occupations, and understanding of the interrelationships between a career and one's life style.

Career Education Goals for Students

The educational process should include utilization of occupational resources at all levels in all careers to help the student reach educational goals.

PRESCHOOL AND ELEMENTARY EDUCATION

Career education is an integral part of elementary education. Basic skills taught in the elementary curriculum are essential to career and life fulfillment. Instructional goals include having each individual:

1. Develop to the best of his/her ability basic skills in communication (oral and written), computations, and problem solving and critical thinking.

2. Develop a sense of self-worth and self-realization.

3. Develop self-confidence in identifying and attaining goals.

4. Begin to identify individual interests and abilities.

The following are specific career awareness goals:

5. Develop an awareness of the many occupational careers available in our society and their dependent and inter-dependent relationships.

6. Recognize that the career role of each individual provides an important contribution to our society.

JUNIOR HIGH

--Develop a positive attitude toward self through an awareness of developing talent, values, and interests as they relate to career goals.

--Explore opportunities in the full range of career choices and the competencies required.

--Develop ability to plan for meeting individual career goals.

SENIOR HIGH

--Explore occupational opportunities in one or several careers and entry-level competencies required.

--Attain competencies necessary for entry into an occupation and/or for specialized education at the post-secondary level.

--Relate career choice to a life style based on interests, abilities, needs, and values.

--Explore the relationship between all education and individual career goals.

POST-SECONDARY AND CONTINUING EDUCATION

--Prepare for entry-level and/or advanced-level employment.

--Upgrade for job stability or career advancement.

--Prepare for new or different opportunities appropriate for individual abilities and interests.

Policy on Career Education

The policy of the State Board of Education is that each school board in Minnesota shall work toward attainment of the goals for preschool through grade 12. Area vocational-technical institutes shall work toward post-secondary goals and take leadership in meeting continuing education goals.

Implementation

Each State Department of Education staff member shall assist in implementing and evaluating career education programs and the assistant commissioners shall divide the responsibilities in such a manner as to accomplish the above goals. Coordination responsibilities including the responsibility for an overall career education plan shall be assigned to a section or unit within the department. All local staff shall assist in implementing, evaluating, and operating career education programs.

APPENDIX XIII

HOSTERMAN JUNIOR HIGH SCHOOL
CAREER DEVELOPMENT PROGRAM

Hosterman Career Exploration, instead of being a difficult and clumsy addition to the teaching process, actually becomes an efficient, affective vehicle for all types of learning.

Pupil Potentials Labs, Inter-Disciplinary Activities, and the Career Resource Center are the three phases that make up the career experiences for the students. Each phase has its own emphasis, but coordinates with the others to lend reinforcement and continuity to the total program.

The Pupil Potentials Labs offer students the opportunity to discuss with persons of their choice, topics of interest to them which could lead to greater insights into their own values. Guidelines have been set up to help students develop skills in talking with adults regarding occupations, and any other concerns the student might have. The materials touch on life-styles, knowledge of self, the world of work, and interpersonal relationships.

The Inter-Disciplinary program is intended to be a three-year program from the seventh through the ninth grade. The seventh grade units developed the Family Model concept. It concerned itself with family communication, sociology, values, and "Who Am I?"

The eighth grade units contain materials that will increase the student's career awareness, not only through field trips, films, and reference materials, but by being afforded the opportunity to talk with the many employed persons who are directly involved in the building of houses. Lifestyles of these people, as well as the lifestyles of families choosing varities of dwellings, will be explored. The eighth grade units are based on the Home Model.

In grade nine, these students, having had the Family and Home Models as a background, will be ready to build a house to scale, and to become members of the community in which their home is to be located. The ninth grade materials are to be developed in the coming year, and will be labeled the Community Model.

The Resource Center provides the games, reference materials and mechanical devices that permit students to explore job clusters as they relate to personal interests and potentials.

CARL SANDBURG JUNIOR HIGH CAREER PROGRAM

1972-1973

ACTIVITIES

The program is administered one week each month from Thursday to Thursday, beginning in October and continuing through February. Two departments (e.g., industrial arts, home economics) are involved each month, according to the following schedule:

October:	Industrial arts, home economics
November:	Social studies, business, social service, law
December:	Health
January:	Science, math
February:	Teaching fine arts, English, foreign language

Selected students are involved in career activities one particular week during these five months. During this week each student has one-half (½) hour study mod each day to familiarize himself/herself with his/her career interest by being able to:

1. Visit our newly organized "Career Center" to browse through materials about his/her career interest

2. View two films, one general film, "The World of Work," and one specific film on his/her specific interest

3. Hear speakers representing the departments involved

As a culmination of the week's activities on Thursday morning at the end of "Career Week," the ninth grader goes out into the community to observe an employer at work.

REGISTRATION

In September, each ninth grader is given an envelope containing instructions, a "Career Planning Guide," and cards for registration. Parents are asked to help their son/daughter choose his/her one strongest career interest cluster.

OBJECTIVES

1. To help the ninth grader develop a healthy self-concept as he/she starts to understand his/her abilities and limitations.

2. To provide opportunities for the ninth grader to observe employers and acquire knowledge as he/she learns to relate to the "world of work."

3. To help the ninth grader develop flexibility in his/her thinking about the numerous opportunities in the future.

APPENDIX XIV

COOPERATIVE EDUCATION PROGRAM

THE COMMUNITY IS OUR CLASSROOM

Cooperative Education is a joint effort between business and education to provide opportunities for youth to learn in the community as well as in school. The coordinators of Distributive Education, Office Education, Home Economics, Work-Experience, and Trade and Industrial furnish the link between on-the-job training and in-school instruction. In this way the school provides an academic education while business furnishes the laboratory.

> Educated people must labor. Otherwise, education itself would become a positive and intolerable evil. No country can sustain in idleness more than a small percentage of its numbers. The great majority must labor at something productive. From these premises the problem springs, "How can labor and education be the most satisfactorily combined?"
>
> *Abraham Lincoln*

The businessman gets the benefit of youth, vigor, eagerness, and new ideas while the student receives guidance and leadership for a minimum of 15 hours a week. The student receives credit for his on-the-job training and classroom instruction in addition to a beginning wage.

The programs are open to mature senior boys and girls, 16 years or over, who are generally released after morning classes to be available to the training stations afternoons. Other schedules are also available for the student. Their general goals should point to an occupation in the field in which they train. These goals may be studied more carefully after high school in advanced education or on the job. The cooperative programs operate during the entire school year.

The work experience program is a cooperative program, but does not fit into the pattern of the training programs outlined above. The latter part of this booklet will explain the important differences.

The last page outlines a program that utilizes community resources and provides exploration of occupational careers.

DISTRIBUTIVE EDUCATION

Cooperative Distributive Education is a program of instruction and training to prepare students for entry jobs in areas of marketing such as storing, transporting, risk-bearing, wholesaling, retailing, and servicing. The student-trainee acquires general skills and knowledge applicable to all distributive occupations and especially to the distributive training station where he is placed.

Certain aspects of the student's adjustment to a job are best learned in the distributive education classroom. Here he learns salesmanship, human relations, display, advertising, and other distributive skills in addition to his regular subjects.

Role playing, small group discussions, projects, and other instruction methods give the student an opportunity to apply directly his distributive skills in school. He also has the opportunity in school to use distributive facilities, such as display windows, display props, showcard writing instruments, sales props, advertising tools, and other equipment.

> Education is too important to
> be left solely to educators.
> *Francis Keppel*

Various other aspects of the student's training and adjustment to a job are best acquired in a job situation. The training may take place in a department store, fashion store, hardware store, furniture store, drug or auto store, food market, specialty shop, wholesaler, advertiser, or in other related businesses.

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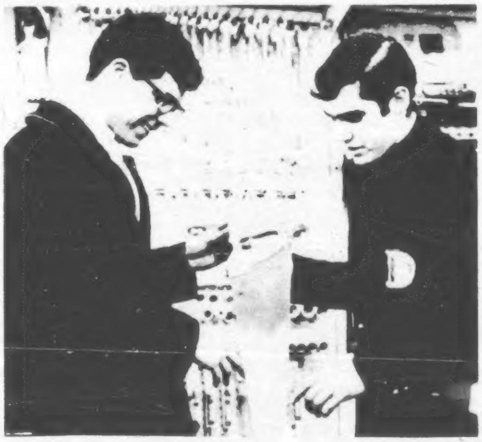

OFFICE EDUCATION

In the Office Education classroom, the young man or woman student develops skills and acquires knowledge applicable to all office occupations. The student is also given training in special skills and information required for successful employment in the office in which he is placed. Shorthand, filing, office procedures, human relations, and office machinery are some of the units covered in the related class in school. These areas are coordinated with practical experiences on the job. The business community provides a laboratory in which the student practices the skills acquired in the classroom. The trainees also acquire additional skills and knowledge which can only be given in a real employment situation. Some of the occupations in which the student is trained are clerk-typist, stenographer, bookkeeper, receptionist, file-clerk, key-punch operator, and duplicating machine operator. These occupations are available in many businesses in the school community.

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> Education is a social process. Education is growth. Education is not a preparation for life; education is life itself.
>
> *John Dewey*

TRADE - INDUSTRIAL

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The Trade and Industrial Cooperative Training Program deals with skilled and semi-skilled areas, such as auto mechanics, drafting, woodworking, floral design, nurse's aid, dental assistance, welding, sheet metal, baking, electronics, printing, plumbing, carpentry, tailoring, and other similar occupations.

The training stations are those that are able to provide training which is complete and in line with current technology. It is through the employer that the trainee will be given experiences under actual job conditions and as a productive member of the business. Such a contact gives the trainee many experiences which would otherwise be deferred until actual employment.

The school provides related occupational instruction that is both individual and group-oriented. Such areas as health and safety, employer-employee relations, employee responsibilities, occupational vocabulary and literature, and personality development are studied as a group. Individual studies of specifically-related technical information are stressed under the guidance of the Trade and Industrial coordinator.

School studies and experiences coincide with the on-the-job training as the student progresses in his development so that one supports the other.

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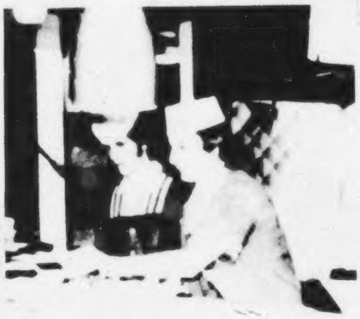
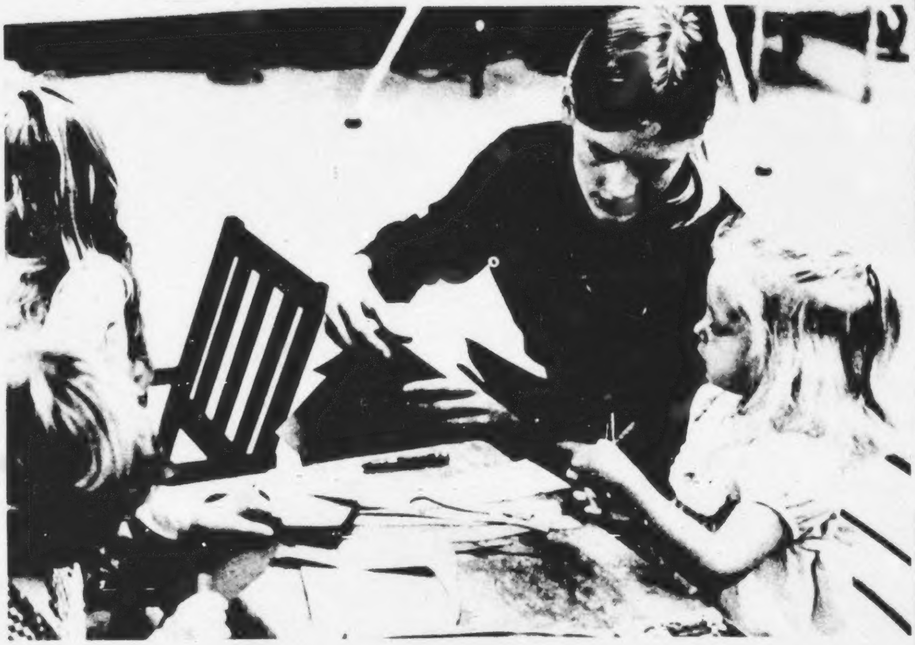
HOME ECONOMICS





> Often in education we are giving kids cut flowers when we should be teaching them to grow their own plants.
>
> *John Gardner*

The Home Economics Cooperative Training Program deals with entry level jobs in the areas of child care, food service, personal services, housekeeping-related occupations, clothing and textiles production and services.

The training stations that cooperate are those which are able to provide training that is complete and up to date. Hospitals, nursing homes, hotels, clothing stores, food centers, and day care centers are some of the community resources that are involved in the program. Students are given experiences which help them learn to be productive members of society. This opportunity in the field will allow them to gain specific skills in the occupation they select, and experience which may otherwise be postponed until they are on the job as a wage earner.

In this program the school provides an opportunity for students to learn related skills in the classroom. In the afternoon in the on-the-job laboratory, students test these skills in a practical situation. Special abilities are taught both in groups and on an individual basis in school. Classroom experiences are coordinated to keep pace with the on-the-job experience as the trainee advances. This emerging program offers promise and opportunity to a large segment of the school population.

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WORK-EXPERIENCE

He drew a circle that shut me out
Heretic, rebel, a thing to flout.
But love and I had the wit to win;
We drew a circle that took him in.
Edwin Markham

The Work-Experience Program is for tenth, eleventh, or twelfth graders whose attitude toward the traditional academic instruction requires special attention. These students have the ability to earn a high school diploma but may not have been able to graduate for a number of reasons: poor attitude, lack of motivation, low grades.

Students in the work-experience program will take prescribed courses in school including the work-related class. Some will immediately qualify for work and will be released during the afternoons; others will work on school projects designed and related to their personal and career needs. Work-experience students will be placed in jobs that do not conflict with the trainees enrolled in the four cooperative training programs.

A senior high counselor will work with the work-experience coordinator to accomplish the main objective of the program: to design a program compatible to the individual student which will enable him to graduate from high school.

WECEP - Work Experience Career Exploration Program for ninth graders started 1973.

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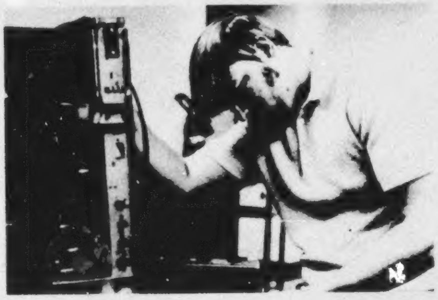
COMMUNITY SCHOOLS



Schools and the surrounding community must cooperate in the job of education. Many educators now realize that the most valuable asset in education has been surrounding the schools all the time, the community itself. Community resources offer the opportunity for education to be involved with real situations and real people, often in real environments. Utilizing these resources is one approach to making education relevant to the needs of high school students. It is a beginning trend that will some day help balance the scales for equality in education for all people and not just those who aspire to college. In addition, educators have talents that may benefit the community. The connecting link of communication between school and community has been missing.

This program in District 281 aims to improve relationships and bring the schools and the community together in a mutually beneficial partnership. The community affairs coordinator is the liaison to develop systems that will provide career exploration for students and utilize resources of both the schools and community. This office provides the community adult education opportunities and the use of the school's facilities as well.

A related community service is provided through the Community Career Center, established to be of benefit to any citizen in need of career planning aid.

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Resume

Cliff E. Helling has held several positions within education including teacher of math, psychology, and business subjects, wrestling coach, guidance counselor, cooperative education coordinator of D.E. and O.E. programs, vocational director, adult education director, administrator, and college teacher. He has written many articles on career development and his text on career education has been used by thousands of teachers through their in-service programs, seminars, or university courses. He has served on numerous task forces, committees, and advisories as well as setting up and directing many 1-2-3 day workshops and 1-2-3 week institutes across the country. He also has a broad and varied background in the business world. He holds five degrees from the University of Minnesota: B.A., B.S., M.A., ED. Specialist, and Ph.D.